The Builder.

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Curiosities of Art.

HO shall write the "Curiosities of Art?" We have "Curiosities of Literature," "Curiosities of Natural History," and Curiosities of this, that, and the other; but we are not aware of any work specially devoted to the "Curiosities of Art." Here, then, is a fresh field for some facile pen. The theme is a suggestive one, and a book at once amusing and instructive might be written on it. Perhaps a few notes and reflections may prove useful as materials to the future D'Israeli of art. In the *Builder* of the 8th of June, 1867, there appeared a critical note on M. Gustave Doré's illustrations of Tennyson's poems of "Vivien" and "Guinevere," then announced as forthcoming. A hope was expressed that this clever and versatile artist would be allowed time to *read* what he was to illustrate before making his drawings. This, as was remarked, he could scarcely have done in the case of "Elaine." We pointed out that in more than one of the illustrations the author's meaning is wholly misrepresented; as, for example, in the drawing supposed to illustrate that passage which says that Arthur, who, "labouring up the pass," had trodden on the crowned skeleton, and sent the skull rolling, plunged down the shingly scaur after the crown,

> "And caught
> And set it on his head,"—

Arthur is shown on horseback! The publisher took exception to this criticism, and replied to the effect that "while the critic was evidently a stranger to pigskin," M. Doré was a most accomplished and daring horseman, and perfectly understood what he was about when he designed this picture. He (the critic) was advised to consult "Greenwood's Horsemanship," and be taught how to pick any object from the ground at the walk, canter, or gallop. We simply reiterated our assertion that the engraving in question was not an illustration of the author's words. If it be thought that this criticism savoured of harshness, the reply is that it has been fully borne out by various writers who have since discussed Doré's merits as an illustrator. Indeed, certain critics, of no mean repute, have gone much further than the *Builder* in their strictures. A recent writer in the *Athenæum*, for instance, using almost the exact words of the *Builder*, says, "We suspect that M. Doré has never read Tennyson, and never thought of Tennyson while engaged upon this work." Whereupon an artist writes, "Does not this remark of yours involve points of importance? Is not the great curse of our day *untruthfulness*, spreading over the nation that stupor from which no one as yet sees signs of escape? And should not every instance of it be frowned down? Is not the book illustrator a *translator?* Why then should he be allowed to falsify his author without disgrace? In his 'Milton,'—the 'Inferno' portion of it,—does not M. Doré treat his great author contemptuously? It appears to me that herein his first characteristic is want of imagination, and his second untruthfulness. Fully enter into Milton's grandly laboured description of Sin and Death; then look at M. Doré's design; and will not a freezing chill seize one?—a feeling that such is a pitiable libel and a disgrace to any person? I hope that English artists will not be led away by the success of this very clever illustrator." Even still stronger language might be applied to Doré's Bible illustrations, many of which are simply worthless and an insult to the sacred text. A writer in the *North British Review* of September last quotes a number of examples of the artist's carelessness and want of sympathy with his subject. In the parable of the Prodigal Son, says this critic, the father is fainting, the whole family are in despair, more like the Jews weeping over Jerusalem. The son, whom the French style *l'enfant prodigue*, is represented as a boy of twelve or fourteen coming slyly round the corner, and down some steps, *pour faire une petite surprise à sa famille!* Again, in the story of the Pharisee and the Publican, it is expressly said the publican stood afar off, and smote upon his breast; but Doré places him close to the Pharisee, and prostrate, with his arms spread, in the attitude of one looking for a needle. The death of Ananias is depicted on a steep hill side; whereas, we are told that the "young men arose and carried him *out*," and that his wife Sapphira came *in*. Again, the burning fiery furnace mentioned in Daniel is represented by three logs of wood in a 10-foot chamber, at the top of which, sure to be smothered with smoke, or suffocated for lack of hydrogen, is the king with his court, calmly looking on. Nothing could be more absurd, more ridiculous. Nay, when the king looked on there were *four* "walking in the midst of the flames," but Doré has only *three*. Other examples might be given, but they are unnecessary, for they would only prove more conclusively the charge of carelessness and ignorance, and consequently of untruthfulness.

Gustave Doré is a clever *French* artist, but he lacks imagination: he is essentially a caricaturist, and it is questionable whether he can draw the human figure correctly. Perhaps the worst compliment he ever received was when it was said of him that, "though not yet thirty-four years old, he has painted, yard for yard, more than any living artist." There is sometimes an evil in doing too much; we may mistake quantity for quality. An artist may paint too many pictures, just as an author may write too many books. Did Doré take more time over his work, and produce less, it would be better for his reputation. The French artist's treatment of the fiery furnace reminds one of Holbein's drawing of the same subject. The prophet's words are, "And these three men, Shadrach, Meshach, and Abed-nego, fell down bound into the midst of the burning fiery furnace." Holbein's furnace is a dome, or cupola, having a door like that of a common boiler in front. Looking from out this aperture are the heads of two men—much in the same position as a couple of female gossips might be at a street window; while another face is seen in the background, the door or look-out being too narrow to admit of the three individuals being equally represented. One cannot but be struck with the undisturbed, nay, comfortable expression and demeanour of the three men, all things considered. But we are bound to say the treatment here is not a whit funnier than Doré's, while the same allowances cannot be made for the nineteenth-century artist as for his fifteenth-century predecessor. The assertion that our religious book illustrations least of all interpret or translate their subjects, seems hardly to require proof: no designs, as a rule, are so unsatisfactorily conceived. For the fault lies more in the conception than in the execution: the great subjects and events of Holy Writ unquestionably offer many difficulties to the artist. In truth, your man of small imagination and mediocre powers is not the man to make designs for the Bible, for Milton, or for Bunyan. Some of the old masters have given at least a grandeur to their notions of Biblical events. They have invariably represented them on a large scale. The figures are massive in design and drawing; they are painted in colours "gorgeous as the sun at midsummer," as if the masters had "dipt their pencils in the colours of the rainbow," and the noble extent of canvas which Raffaelle, and Rubens, and Titian have given to their great works, gives them the dignity and splendid effect which they possess. It seems to us that such subjects as God appearing to Moses "in a flame of fire out of the midst of a bush," "Christ's Agony in the Garden of Gethsemane," and the "Ascension," are wholly incapable of being illustrated by the insignifiant engravings which we see in pocket Bibles. A woodcut or steel engraving, a few inches square, cannot possibly represent subjects of so sacred an import. Can such a picture inspire any feeling of reverence or solemnity whatever? Does it impress one in any way? It may be questioned, indeed, whether the great I Am, who is a spirit, is—with reverence be it said—a fit or legitimate subject for a pencil. A pictorial illustration must utterly fail to assist us to realize that glorious Being whom eye hath not seen. The extent to which some of the great painters have travestied sacred subjects is familiar to all students of art, and the liberties taken by a ruder school are amusing by their mingled absurdity and singularity. In some of his pictures Rembrandt made Abraham a burgess of his time, and the Messiah a burgomaster of Saardam. In the old paintings representing Adam and Eve it is not uncommon to find the forbidden fruit varying with the country or province. In Normandy and Picardy it is the classic apple, one of the riches of the country; in Burgundy and Champagne, the bunch of grapes; in Provence and Portugal, the fig and orange; whilst in America it is the guara. In Greece it is generally the fig, which is adopted on account of the sweetness and abundance of the fruit. In Italy it is sometimes the fig, sometimes the orange, according to the province or caprice (*Edinburgh Review*). In the gallery of the Convent of Jesuits at Lisbon, there is said to be a fine picture of Adam in Paradise, dressed in blue breeches with silver buckles, and Eve with a striped petticoat. At either Paris or Versailles may be seen a painting of the twelve apostles represented in bag wigs and swords; and we have somewhere read of a tract printed in 1641 entitled "Newes from Helle," which has a rude vignette representing the devil ill in bed and attended by several doctors in square caps, evidently meant for Jesuits. Lord Orford relates a curious anecdote of Antonio Verrio to the effect that when this artist was employed at Windsor he quarrelled with Mrs. Marriott, the housekeeper (whose portrait is now at Hampton Court), and borrowed her ugly face for one of the furies, in order to gratify his personal pique. To flatter the Court he represented Lord Shaftesbury among the demons of faction, distributing libels. There is also at Hampton Court a study for a proposed ceiling by Verrio, in which he introduced Sir Godfrey Kneller, Mr. May, the surveyor of the works, and himself, in long periwigs, as spectators of our Saviour healing the sick. What is the reader's notion of the fate of King Pharaoh, of Red Sea celebrity? The popular idea is that

his majesty was drowned on the unhappy occasion in question. Nor is the notion of recent adoption; it has been in vogue for centuries, and may have been an article of faith with Solomon for all we know to the contrary. But there is no foundation in Old Testament history for the supposition; and yet, nothing is more common than Pharaoh in the middle of the Red Sea as a Scripture illustration. Thus, in Holbein's Scripture cuts we have the Egyptian king with "the waters closing over him." The host is in the very act of being swamped,—after the grotesque manner of Holbein,—the crowned head of the king occupying the foreground, while the Children of Israel are all comfortably landed on the other side, quietly enjoying Pharaoh's discomfiture. The text quoted is Exodus xiv. 28,—"And the waters returned, and covered the chariots, and the horsemen, and all the host of Pharaoh *that came into the sea after them;* there remained not so much as one of them." A more recent instance of belief in this opinion may be found in the frontispiece of Maunder's "Treasury of History," where we have Pharaoh drowned, "done" by W. H. Brooke, A.R.H.A. Some of Holbein's other cuts are equally quaint, as "David killing Goliath." David and the giant are represented as in close combat; the former is in the act of striking Goliath in the face with the *sling*, while the giant's spear or club is almost touching his antagonist's leg. And, by the way, in the letters recently received from Abyssinia, we have some particulars with regard to Abyssinian notions of sacred art, curious enough in their way. The church of Attegrath, we are told, is ornamented within by rude pictures of saints and incidents in Biblical history, executed without any idea of perspective. "Nor is the absence of art redeemed by antiquity, as they have been finished little more than half a century. Among other errors of the artist, critics have discovered a glaring anachronism in one design. The subject is 'The Passage of the Red Sea.' Moses, standing on the farther bank, is shaking his rod with mocking irony over Pharaoh, whose horse is rapidly being submerged; while the Egyptian infantry, already nearly engulphed, are holding their firelocks over their heads." How curiously amusing, too, the treatment art—not nature—has bestowed to give us an idea of Paradise. In speaking of the correctness which the last century praised so much, Macaulay, in his essay on Moore's "Life of Byron," says, it "resembles the correctness of those pictures of the Garden of Eden which we see in old Bibles. We have an exact square enclosed by the rivers Pison, Eidon, Hiddekel, and Euphrates, each with a convenient bridge in the centre, rectangular beds of flowers, a long canal, neatly bricked and railed in, the tree of knowledge, clipped like one of the limes behind the Tuileries, standing in the centre of the grand alley, the snake twined round it, the man on the right hand, the woman on the left, and the beasts drawn up in an exact circle round them. In one sense the picture is correct enough. That is to say, the squares are correct; the circles are correct; the man and the woman are in a most correct line with the tree; and the snake forms a most correct spiral, &c." *Apropos* of this is a story told of old Lord Selkirk in the days when symmetrical arrangement was considered the *acme* of gardening. One day he found a boy shut up in a summer-house at the end of a terrace at St. Mary's Isle, and was informed by his gardener that it was for stealing apples. On reaching the other end of the terrace, where there was another summer-house, Selkirk beheld the gardener's son looking dolefully out of the window. "Eh! John, what is this? Has your boy been stealing too?" "Na, na, my lord," was the answer, "I just put him in for *see-metry!*" We look for something truer and more advanced now, though, as we have shown, modern art is occasionally singular and eccentric. Not long ago a respectable London publisher issued an "illuminated" Bible, in one of the parts of which there is an engraving of Joshua before the walls of Jericho. The warrior is mounted on a bare-backed rampant steed; one hand grasps the hilt of his sword, while the other is pointed aloft in the attitude of direction. Supposing the law of gravitation to be in force in those days, which by the bye, is proved by the tumbling walls of the doomed city, the conclusion is irresistible that it is a physical impossibility that the rider could keep his seat. Another Bible, printed at Oxford in 1860, contains an illustration of Ruth gleaning, and represents Boaz wearing a pair of modern-shaped shoes, such as our grandfathers wore. In regard to the treatment of secular subjects, again, innumerable examples of incongruous art might easily be given. In the present day, while we have plenty of clever artists,—and there is a good deal of original art,—there is at the same time a vast quantity of wishy-washy illustration,—illustration that does not illustrate,—served up to the public. At no other time, perhaps, was there half so much. We speak more particularly of that kind of artistic talent which finds its market in the illustrated weekly and monthly magazines of the better sort. *Cornhill* and *Cassell's* may be instanced as representing the class of periodicals we mean. The fact is that art, like literature, in these latter days, is to a great extent done to order. It has become an article of manufacture,—the artist being merely a producer, and oftentimes no more than a reproducer. The demand for a certain kind of thing called illustration has reached such a pitch that this, like almost everything else now-a-days, must be done on the spur or not at all. Mr. F. Palgrave, writing of London statues, in the March number of *Broadway*, says of Chantrey, that his success was his ruin as an artist. "Rapidly becoming fashionable, he seems to have lowered his standard to the level of his patrons, and henceforth rarely gave himself time to work out anything; substituting a few vague curves and planes in the features, and large empty folds in the drapery, for the thousand lovely subtleties and difficult truths of nature." The description is applicable to some able artists of the present day, who seem to forsake originality for what "takes," and to sacrifice conscientious hard work to success. To judge from much that is to be met with in the way of book and periodical illustration, one would say that the artist had never had a chance of reading his author; at least, the text, if seen, has been very imperfectly read. In illustrating Mr. Trollope's story of "The Claverings," in the *Cornhill*, a clever and graceful artist represents the hero without whiskers and moustache for twelve months, but the month immediately following he appears with hirsute adornments in the greatest abundance. Perhaps Miss Edwards had a notion that the hero was at perfect liberty to "grow a beard" if he liked. No doubt; but even a lady, not to say an artist, ought to know, that under the most favoured conditions, the thing cannot be done in a month. However, in the very next number of the magazine, we have a vignette of the hero with his moustache, but *minus* his whiskers; and then in a large plate, which is supposed to depict him as he appeared a few hours after, he has neither whiskers nor moustache. If this be not capricious art, what is? Again, while Mr. Thackeray jests about Clive's beautiful whiskers and handsome moustache, Mr. Doyle persists to the end in denying young Newcome the possession of those tokens of manhood. Once more, in vol. ii. of "Pendennis," there are two engravings to the text at p. 165. Just before Huxter comes up to Captain Costigan, who is drunk in the street, he (the captain) wears a battered old hat, his well-known cloak, and a dress-coat underneath it. This is illustration number one. In ditto number two, the intoxicated Costigan is represented as having fallen, and Huxter is assisting to raise him. Now the cloak is gone, which is possible enough; but that the shocking bad hat should have suddenly altered its shape, and assumed a respectable appearance, and the swallow-tail should have changed into a frock-coat, must be left to the explanation of the artist. If we descend the artistic scale, and glance at a lower class of publications, we shall find still greater curiosities of art. Some one said of a few of Turner's landscapes, that they were *pictures of nothing, and very like.* But it might be said of the works of not a few modern illustrators, that they are pictures of something, and very unlike. How seldom, for example, does a picture of some public scene or event in any of our illustrated newspapers tally with one's own recollections of the scene. Instead of a "full, true, and correct account," pictorially, we get for the most part a bundle of caricatures, or a confused mass of impossibilities. We chanced recently to be present at a public meeting in Exeter Hall, where a well-known lord addressed the audience. A view of the meeting appeared in one of the illustrated weeklies on the following Saturday, with the noble lord in the attitude of speaking. We hope his lordship liked his portrait. He must have felt flattered with the eminently D'Orsay-like appearance which it pleased the imaginative artist to give him. He was even generous enough to insist upon his lordship appearing in wonderfully fitting evening costume, in place of the ordinary morning suit, in which, as a matter of fact, he did appear. For the rest, the picture was as meaningless and unlike the thing meant as it was possible for picture to be. A short time since, there appeared in another popular periodical a narrative of the capture of an alligator on the coast of Malabar. The faithful historian, who was an eye-witness of the feat, tells us that "James, without a moment's hesitation, seized the mugger by the tail, and gallantly did he stick to it." The said mugger is described as having been 13 ft. 4 in. long, and a woodcut shows James (who, *mirabile dictu*, is clad in a suit of black, with an ordinary English hat) clasping in his arms the hinderpart of the animal, while we may suppose the body to be struggling on the ground. The sketch is called "Catching an Alligator by a new Method." About the newness of the method there can be no doubt. The writer who told this astounding story, the artist who drew the picture, and the editor who printed it for the benefit of a generous public, are equally entitled to commiseration. But even this is nothing to some of the feats performed by the writers and—shall we say artists?—of certain pictorial prints. The advertisement of one of these journals, which has become quite notorious as a chronicle of blood and murder, and filth, and wickedness generally, recently stated that the forthcoming number would contain "a large engraving of the *suspected* murder of a boy by his father at Hoxton," with "three subjects in connexion with this fearful tragedy." The "dragging for the body," was to form an illustration which would "fill half the front page of the paper." (There was a temptation and inducement to buy!) Furthermore, there were to be engravings of "The Burning of a Ballet Girl"—"The Suicidal Leap of a Young Lady from Westminster Bridge"—"Murderous Revenge of a Negress"—"Inhuman Treatment to a Child"—"The Selling of a Wife at Blackburn"—with half a dozen other equally revolting topics, "all taken from sketches by artists expressly engaged." Of course, we are asked to suppose that in each case the proprietors knew that these events were to occur, and at once despatched special artists, who sketched the scenes on the spot. But it will be said, "You do not call this art?" It is not truth, but in one sense it is art,—the art which finds its patrons and its pupils among the lowest orders. The fact that the publication in question boasts of a circulation of 150,000 weekly,—whether this be so or not, the figure must be large,—the fact, also, that its office-doors are usually "besieged," are indications of its popularity, and the influence which it must exert on the minds of its credulous readers. What the nature of that influence is we need not inquire. The paper is supplying an art education of the very worst kind to the most dangerous and ignorant of the population—the very class which stands most in need of something higher and healthier. In truth, each successive number of this wretched print is an additional obstacle to the efforts of the true art teacher, as well as to moral and intellectual improvement of the masses. Leaving those publications which may be said to confine themselves exclusively to the horrible and revolting in human nature, and give exaggerated and unnatural representations even of that, what shall we say of another class of indecent rubbish of a pictorial kind that has sprung up with so much French effrontery in our midst of late? Portraits from the Mabille and Cremorne, coloured sketches of abandoned women who haunt the most notorious streets of the metropolis, valentines of the filthiest description, and photographs of the grossest taste, are at present exhibited for sale to an extent and with a publicity which we hardly believe would have been tolerated a few years ago. As compared with the coarse pictures to which we formerly alluded, we regard this prostitution of art as ten times more baneful in its influence. The principal marts of this vile trash are in the vicinities of Wych-street and the Seven Dials; but it is a matter of every-day observation that some respectable printsellers no longer scruple to exhibit half-naked figures of "celebrated" French actresses in the same line with the portraits of English statesmen, poets, and church dignitaries. A paragraph is just now going the round of the newspapers informing the world that "a photograph may be seen in the shop windows of Mr. Swinburne, the poet, squeezing Adah Menken's hand, and looking into her eyes like a

'dying duck.'" This, it would appear, is the latest thing out in photographic fashions; and a piece of ingenious impertinence it is, to call it by no worse name. The idea is thoroughly Parisian. It may be remembered that the same rather remarkable lady, about whom the public has heard so much in one way or another, and a celebrated French novelist, appeared in a similar interesting situation not long since, and that the affair gave rise to an action at law in the French courts. Where is this sort of thing going to end? Is it not scandalous that the reputation of public men should be thus made traffic of in order to minister to a prurient taste? The gross and libidinous caricatures of Gilray are no longer popular; the taste for Rowlandson's glutinous sketches has died out; but it may be doubted whether we have not something quite as bad, if not worse, in their place. And how such infamous publications as *The Town*, and others of a like stamp, are allowed week after week to flaunt their indecencies in the face of Lord Campbell's Act is surely a thing to be wondered at and lamented.

THE DESIGNS FOR MANCHESTER TOWN HALL.

In our last issue we quoted from the letter of Mr. Heron, the Town Clerk of Manchester, requesting further information on certain points from the referees as to the relative merits of the four principal designs in these respects, and the letter from the referees accompanying their second or detailed report sent by them in reply. We will now approach the designs at present on view in the large room of the Town-hall, Manchester. This remarkable competition has arrived at what, we presume, may be considered its last phase. On Monday, March 30th, the second report of the referees, which placed Mr. Waterhouse first in the order of merit, was brought up by the sub-committee, and the City Council confirmed the decision by formally accepting Mr. Waterhouse's design, and resolving that the exhibition of the designs should be opened to the public on Thursday, April 2nd, for fourteen days.

The citizens of Manchester can now judge for themselves as to whether or no the City Council have made the best use of the authority confided to them; and architects have an opportunity of criticizing the award of the judges, the efforts of the several architects, and the strength of their claims to represent the profession in such an important contest.

The beneficial effect of such an exhibition on the public mind must be considerable: it affords to the greater portion of the community the only opportunity within their reach of judging of the dignity of architecture as a profession, and the claims of its professors to the title of artists. To the competitor, occasion is afforded of showing to the world what is really in him, and of breaking a lance with his professional brethren in the arena of architecture, thereby raising or lowering his position amongst them. To the student of architecture a lesson is provided, set forth in its most attractive form, and, if not properly studied, the lost opportunity will be required at his hands.

The City Council have shown every desire to free themselves entirely from the trammels of favouritism and "jobbery" too frequently connected with transactions of this nature. In the first place, by asking for the smallest number of drawings capable of illustrating the intentions of the competitor; secondly, by the liberal remuneration offered to those who might engage in the second competition; and, thirdly, by calling in the aid of professional arbitrators to enable them to arrive at a sound decision.

This liberal and straightforward conduct on the part of the Corporation met with a ready response from the profession. Men of the highest standing from all parts of the kingdom applied for "instructions," to the number, we believe, of 500. Of these about one-quarter submitted designs, amongst whom we noticed the names of men "conspicuous by their absence" in many similar contests; owing, doubtless, to the prevailing distrust amongst architects towards that standing anomaly, a "building committee"—that unapproachable creature, that irresponsible party, possessing neither a soul to be saved, nor a person to be kicked.

The presence of these architects may surely be taken as a compliment to the council—a vote of confidence, in fact; and we have every reason to believe that the result of this contest will show that the confidence of the architects in the good faith of the Corporation has not been misplaced. The costly and substantial manner in which the council propose to carry out the work is eminently characteristic of the native vigour for which Manchester men are celebrated, and which we are pleased to find is not limited to matters of commerce alone, but also displays itself in public buildings. The result of this competition must be highly gratifying to the citizens, proving, as it does, that one of their number is able to cope successfully with the best men of the profession.

The writer has seen all the drawings, and can confidently say, that either for architectural excellence, skill in planning, or artistic and delineative execution displayed in the drawings, no finer collection (not excepting even that for the London "Law Courts") has ever resulted from one single competition.

The general average of excellence is so high that the race appears to have resulted in a nearly dead heat amongst the first two or three competitors.

The "Instructions to Architects" are so voluminous and explicit that none who have not either worked on the plans, or made themselves thoroughly acquainted with the requirements by patient study, can adequately appreciate the difficulties with which the competitors had to contend. These instructions are the result of four or five years' consideration of the individual requirements of each department of the Corporation, and many plans have been prepared by the city surveyor, Mr. Lynde, from which the dimensions of rooms and other important particulars have been derived. The experience also gained from the first competition decided the council to alter and considerably augment their list of requirements.

For the benefit of those amongst our readers who may not remember the particulars of the different stages through which this competition has passed, the following *resumé* may prove of use in assisting them to understand thoroughly the present state of affairs.

In March, 1867, architects were invited by the corporation of Manchester to submit designs for a "Proposed New Town-hall." A guarantee was given to those who might compete that "not fewer than six or more than twelve" of their number would be invited to engage in a second contest, to be conducted on a much larger scale than that laid down for the first trial. In this final struggle the prize would be the erection of the building, with the usual professional remuneration; and each of the unsuccessful architects was to receive 300*l.* as payment for his labour, provided that the required number of drawings had been submitted. The council also promised to call in professional assistance to enable them to arrive at a fair decision. The drawings asked for were plans of ground and first floor and elevations of Albert-square, Princess-street, and Cooper-street fronts, it being understood that the elevation towards Lloyd-street should be little inferior in finish to the other three.

The drawings composing a single design occupied a vertical compartment on the walls of the exhibition-room; and, to secure the different panels being filled in a uniform manner, a clause was inserted in the conditions requiring each pair of plans to be accompanied by a separate set of elevations. The dimensions of the mounts and scale of the drawings were also prescribed, in order to secure further regularity.

In reply to this liberal offer 123 architects in August last sent in 137 designs, some competitors having furnished three distinct sets of plans.

A sub-committee was appointed by the town-council for the purpose of examining and reporting upon this large number of drawings. The result of their deliberations, aided by the Conductor of this journal, who was called in by them for that purpose, was the selection of a certain number of designs, found to be by the following gentlemen:—Mr. Salomons, of Manchester, two sets of plans; Messrs. Speakman & Charlesworth, Manchester, two sets also; Mr. Thomas Worthington, Manchester; Mr. Alfred Waterhouse, Manchester and London; Mr. John O. Scott, London; Mr. T. H. Wyatt, London; Mr. Cuthbert Brodrick, of London and Leeds; and Mr. W. Lee, of London; the honours being thus equally divided amongst local and London architects.

An exhibition took place which lasted fourteen days; but the successful designs, the authors of which were again to compete with each other, were, of course, not shown.

Shortly after the election of the eight architects a fresh set of instructions, supplementing and considerably altering those first prepared, were issued, and February 14th, 1868, named as the last day for receiving the second set of designs. On St. Valentine's Day the drawings arrived, and we venture to say no enamoured swain or blushing maid received on that eventful morning a more valuable offering than did the worthy mayor of Manchester.

Upon their reception the town-council held several meetings for the purpose of deciding on the best mode of dealing most fairly by their authors. It was finally arranged that Professor Donaldson and Mr. Street should be invited to visit the collection and report on the respective merits of the different designs. These gentlemen accordingly drew up a report, which placed the competitors in the following order, with reference to the different subjects upon which the judges were required to report. The numbers attached to the several designs, and used instead of the mottoes by the judges, for convenience of reference, are as follow:—

1. "Arnolfo di Lapa"—Mr. W. Lee.
2. "Faire sans dire"—Mr. T. H. Wyatt.
3. "Fides"—Mr. Cuthbert Brodrick.
4. "Sperandum"—Mr. John O. Scott.
5. "St. Valentine"—Mr. Alfred Waterhouse.
6. Interlacing triangles—Messrs. Speakman & Charlesworth.
7. "True to the line"—Mr. T. Worthington.
8. "Valentine"—Mr. Edward Salomons.

Summary of Judges' Report.

6, 4, 7, 5, for architectural excellence.

5, 6, 8, for arrangement of plan and construction.

5, 7, 8, for economy and likelihood of being executed for the stipulated sum.

5, the best for natural light and ventilation.

5, 6, 4, 7, were considered to be the best in point of general merit, according to the order in which they are placed.

This report pleased neither the council nor the competitors quite, and the judges were required to answer a list of questions, and to state more in detail their reasons for arriving at their decision. A second report was in consequence prepared, the judges re-asserting their previous decision as to the superior merits of Mr. Waterhouse's design, and giving detailed reasons for objecting to the other plans. They requested that the contents of this second communication might be considered as confidential by the council, and not be published or communicated to the competitors. Nearly the whole of its contents has transpired, as the council might have known would be the case. Some of the unsuccessful men are angry at the prospect of having the report only partially known, and have in consequence demanded to see the document, or such portions of it as referred to their own designs.

Up to the present time, however, this has been refused; but the weight of influence which will be brought to bear on the council must eventually compel them to rescind their resolution of secrecy. Considering that a portion has already been divulged, we think it desirable that the whole should be published.

Before proceeding to review the different designs in the order of the numbers used in the report, it would be well to describe the site on which it is proposed to erect the new edifice. The shape is that of a blunt wedge, or a triangle with the acute angle cut off. Along the street line the dimensions of the different sides of the plot are,—Princess-street, to the north, about 300 ft. long; Lloyd-street, to the south, about 345 ft. long; Albert-square, the principal front to the west, about 330 ft. long; and Cooper-street, to the east, about 95 ft. This latter end is about 2 ft. higher than the centre of the Albert-square front.

Up to the beginning of this month strenuous efforts were made by Alderman King, and a strong body in the council, to have the present site enlarged, and converted into a rectangular plot. The Oxford-road, one of the main arteries running south-west could, by that means, be continued into Albert-square, and the narrow and tortuous streets that at present connect them, be swept away.

Let us now look at the designs *seriatim*.

No. 1. "Arnolfo di Lapo." Mr. William Lee, London. This gentleman has dedicated his design to the great architect of the Cathedral of Florence, the pupil of Nicolo Pisano, but we

have grave doubts as to whether this defunct worthy, could he re-assume "this mortal coil" for the nonce, in order to view the result of his pupil's efforts, would feel flattered by the doubtful honour conferred on him. As nearly as we can describe it, the style adopted is intended for a perpendicular treatment of Venetian Gothic, but so crowded is the whole with the most elaborate and diminutive detail, that the effect usually produced by the Venetian, or predominating style, is lost. The clock-tower rises from the centre of the Albert-square façade; and after leaving the roofs, ascends in a very plain and unimposing manner until it meets a heavy machicolated cornice, with parapet bounded at the corners by four angle pinnacles. The whole is crowned by a somewhat squat slate saddle-hipped roof, having dormer windows on its four faces. Two bold flights of steps, isolated from the rest of the building, rise from the street, on either side of the entrance to the ground floor, and land on a terrace or platform over the same. From this access is gained to the great vestibule on the main floor, through which the great hall and state-rooms are approached. This staircase is not, however, shown in the perspective view.

The connexion of the circular angle turrets, with the pavilions flanking the Albert-square front, is not satisfactory. The upper part of their roofs should rise higher above the side gables to obviate the present smothered-up appearance from which they now suffer; and the whole of this group is not sufficiently grand for the importance of its position. The Cooper-street corner of the Princess-street elevation is not sufficiently accentuated, and the central feature in Princess-street is too great for the remainder of the elevation. Four perspective views, very beautifully drawn in line and etched, illustrate the design. The detail shown is, in part, very good, and some beautiful bits of grouping will be found in these views. The interior of the large room is fine, but rather tame. A curved wooden roof, of low pitch, rises from hammer-beams, supported by corbels springing from the wall shafts, the space between the corbels over the heads of windows being finished with a flat ceiling. The windows are too wide for the amount of wall space between. One bay of this hall, drawn to a large scale, and showing the coloured decorations, is given. Frescoes are shown below the windows, and canopies containing statues separate the different bays. Twenty-three drawings, including views, explain this design, and the cost of carrying it out is placed at 250,000*l.*,—the limit assigned by the instructions.

No. 2, "Faire sans dire," by Mr. T. H. Wyatt, of London, the architect of the Liverpool Exchange, is an Italian design, with French treatment, exhibiting great dignity and repose. The main entrance, or grand portal in centre of Albert-square front, is massive and chaste. The clock-tower over it, however, is not equal to its position, being too insignificant for the angle towers flanking this elevation.

In the main façade, the basement is quiet and massive, and above it a colonnade detached from the front wall supports a deep cornice, with statues over it. The attic story is so lofty that it detracts from the scale of the lower parts of the façade, and its windows are too like those of a dwelling-house to suit the other parts of the composition. No roof appears over this, although two Mansard roofs abut against the angle towers.

The circular angle towers rise from two bold projections with high slated roofs, between which the colonnade of the main front is continued, terminating above in well-proportioned domes. The interior of the public room is very grand, and shows a circular roof formed by ribs springing from red granite columns. The lower portion of these columns and their dados are attached to pilasters supporting the side galleries, and resembles strongly the treatment of the large room in St. George's Hall, Liverpool. The interior of the council chamber, and those of the dining-room and principal entrance, are very pleasing, and beautifully drawn and coloured; in fact, the manner in which the views of this design are finished is highly creditable to all concerned in them. The plan is simple, practical, and clever, but the internal areas are small. The main floor is gained from the street by three flights of wide steps, an ante leading to the end of the public hall. Passages on either side of the hall are connected with it by doors at the centre and ends of the same. Four small staircases occur at the angles of the hall leading to the galleries. Committee-rooms and open areas are placed each side of the whole.

The council-chamber and main entrance adjoining come between the mayor's department and the state rooms. The mayor's entrance on the ground-floor is placed in the circular angle tower, 31 ft. in diameter, at the corner of Albert-square and Princess-street. From this hall stairs lead to his rooms above. In the basement a metal tramway laid along the main corridor serves for the circulation of heavy goods. The areas provided are too small, in a climate like that of Manchester, for a proper supply of light and fresh air. Including views, this clever design comprises twenty-one drawings. The estimated cost is placed at the required limit of 250,000*l.*

In No. 3, "Fides," Mr. Cuthbert Brodrick, best known by the "Leeds Town-hall," has collected the largest possible number of small shafts, and, with the assistance of pointed arches, has raised a palace for the,—fairies. The group formed by the large towers is fine when considered merely in outline. All the towers are circular and very large. On the ground-floor the base of the clock-tower, which is of great diameter, is devoted to a large entrance-hall, which swallows up the best portions of the front part of his plan. Part of the colouring of the exterior view is very spirited, especially the foreground. The plan has merits.

No. 4, "Sperandum," Mr. John O. Scott (son of Professor G. G. Scott).—This design is illustrated by no less than twelve beautiful and highly-finished exterior and interior views; some of considerable size and merit as coloured drawings. This is, we believe, the first occasion on which Mr. J. Scott has come before the public. The question naturally presents itself, if his first essay be so successful, what manner of man will he be when he has attained to his father's age and experience? The "Main Entrance," in the centre of the Albert-square façade, has over it a porch of two stages; the upper one gained through the large ante-room on the main floor, provided for public speaking at elections and on similar occasions. In the front elevation it is composed of three arches with angle buttresses, finishing in very graceful pinnacles. The side arches are pointed, but the centre ones are elliptical, and produce an unpleasant effect. This might have been easily avoided by making the side arches slightly wider, and changing the ellipse into a stilted semicircle. Over this porch rises the clock-tower. After leaving the roofs, it shoots up straight like a rocket. By an anxious journey heavenwards, the eye at length reaches the clock, and over it a parapet with the usual allowance of pinnacles. The whole is crowned with a lofty hipped roof of (too) green slate. Taking the tower as a whole, it is really grand. The lines are plain, but dignified and refined. There is nothing novel about it, and still it is satisfactory. The ground-floor windows are good; and over them, on the main floor, come pointed windows with traceried heads. These two floors are divided into bays by buttresses terminated on level of main floor by canopies containing statues. The windows of the upper story are divided by pilasters, and over them come a series of narrow stone arches, and the wall behind pierced with an occasional lunette; over this a cornice, and a high-pitched roof. This elevation is terminated north and south by octagonal turret staircases, continued to such a height above the cornice as to give them a somewhat lanky appearance. As the only projections in the front are the porch and buttresses aforesaid, the general effect is flat, owing to the absence of strong shadows and contrasts.

The tower at the Cooper-street end of Princess-street is somewhat similar to the clock-tower, but a better composition on the whole. The main entrance on the ground-floor is under the covered porch. A vestibule leads to the grand staircase, with dome-light over it. The grand staircase lands the public on the state corridor of the main floor. Returning along corridors right and left of the staircase, the public would enter the grand hall. This is cruciform on plan, the arms of the cross being cut off from the remainder by three arches, and occupied by galleries. Two beautifully finished interior views show different methods of finishing the roof of this hall; the one by a dome springing from pendentives, and the other by a simple arched roof slightly pointed, supported by groining springing from wall-shafts, somewhat similar in treatment to that of Mr. Lee's. The drawings showing the grand staircase and council-chamber are works of art of no mean pretensions. The grand stairs leave the ground-floor by a wide central flight of steps, and after gaining the first landing separate into two flights terminating on the state corridor. Round the whole is a series of graceful arches on marble shafts supporting a glass roof. The estimated sum for carrying out this design, including the domed finish to the great hall, is 261,775*l.* Mr. John Scott has a career before him that can scarcely fail to be eminently successful.

No. 5, "Saint Valentine," by Mr. Alfred Waterhouse, the architect of the Manchester Assize Courts, and the successful architect in the present competition. The general grouping of the tower roofs and prominent features of this design is most effective, and must have been well studied. The individual parts, however, seem to have had less attention. The Albert-square elevation has a central feature,—a boldly-designed gable, with angle buttresses and pinnacles over, projecting forward from the main building to the street line. On the ground-floor this forms the porch to the vestibule, and is gained by a wide and low-pointed arched door, the whole enclosed by a hood gable, constituting an insufficient main entrance. In this gable over the porch are three windows, of two lights each, having traceried and pointed heads. In the stage above are windows similar in character to those below; and in the gable itself are smaller lights, suited to their position. Behind this gable, and from the main walls of the building, rises the clock tower. Its outline is plain. The top stage is occupied by three pointed arched openings in each face, and over them a parapet with angle pinnacles. Over this story the tower changes into an octagon, containing four clock-dials. The sides facing the angle pinnacles appear somewhat unstudied and bare. A slated pyramidal roof terminates the whole. The perspective views are lined in brown ink, and coloured in sepia and Payne's grey. They are executed in a bold and artistic manner. The small view on the same mount as the Cooper-street elevation is a gem in its way. The interior view of one of the three winding staircases is also worthy of close examination. We have no doubt that when Mr. Waterhouse has more leisure for the study of the detail of his elevations, a perfectly successful design will be the result. The style adopted is a free treatment of Early French.

The ground-floor is approached from Albert-square by the porch before described. On each side of this porch are small chambers for the use of the porters. Next comes the vestibule, placed immediately under the clock-tower; but how this is to be lighted, except with the most "dim religious light," we cannot say. This vestibule leads into the staircase hall, and from it runs a passage in the direction of Cooper-street, giving access to all the rooms of the police department placed under the public room. In the entrance-hall the grand staircases rise to the right and left landing on the main floor, either side of the entrance to public room. At the extremes of the front corridor on main floor are public entrances into Princess and Lloyd streets respectively. At the junction of this with the side corridors occur winding staircases, and a similar one is placed immediately opposite the entrance from Cooper-street. The treasurer's department is on the left of the main entrance. Then, turning the corner into Princess-street, come the public entrance, the mayor's entrance and staircase, weights and measures offices, paving and highway, and water department. Going from Cooper-street down Lloyd-street we find first the Court of Record, warehouse keys, some distance from the police department, under whose protection it lies, workshops for weights and measures at the opposite corner of the building from the offices connected with it. Then come the gas and scavenging departments, and the inclined cartway leading to the basement. Stairs to porter's residence, and a public entrance complete this frontage.

On the main floor the front is occupied by the state departments in the following order:—At the Princess-street end, the dining-room, reception-room, ante-room to same, under clock-tower, and projecting over the porch, large committee-room, ante and council-chamber. On the Princess-street front, next to dining-room, come the mayor, town clerk, assistant town clerk, and city surveyor; and off the cross corridor, at end of public hall, connecting the Princess-street with the Lloyd-street blocks, is placed the committee clerk. The three committee-rooms are put over the centre of Lloyd-street front. The public hall is placed at right angles to the Albert-square front, and is entered

only at the ends,—an arrangement which would prove inconvenient were the hall portioned out into three different divisions in the event of its being hired for a public entertainment. The hall is finished above with a high-pitched roof, having large hammer-beamed curved principals, much resembling the hall in the Assize Courts; but not to be highly commended for its acoustic properties.

This plan has been placed first for simplicity of arrangement; but to gain this simplicity, the "instructions" appear to have been a little overlooked. In Cooper-street and Princess-street, for instance, the central features encroach upon the space reserved for areas. The wall of angle pavilion, crossing the dining-room, will, we imagine, be supported by a strong iron girder, but the internal pier that would support this girder is gutted by a hoist, leaving only a shell of brickwork, about 9 in. or 14 in. in thickness.

It is considered by the architect that the whole could be executed for a sum less than 250,000*l*. Out of nineteen drawings, seven are perspective views.

To No. 6, Interlacing Triangles, Messrs. Speakman & Charlesworth, the judges awarded the first place for architecture. The Albert-square front is by far the grandest and most original conception in the room. In this design the central group is formed by a stately porch of three pointed arches, through which a broad flight of steps leads to the main floor. The centre one is nearly double the width of side arches, and is enclosed by a crocketed hood-gable. The middle ones are more massive than the angle piers, imparting a weak look to the latter, where extra strength and abutment are to be expected. Over the porch the façade is carried up one stage higher than the rest of the building; on the centre is a crocketed gable with small canopy for finial. A sculptured circular medallion fills this gable. On either side are beautiful octagonal turrets, two stages in height, rising from a square flat, bounded by pinnacles. The construction for supporting these turrets is not hinted at externally, and, as in Mr. Waterhouse's case, they do not grow naturally out of their square bases. Above all, and behind the central gable, rises the lofty clock-tower, too much resembling that of the Assize Courts to be erected within a mile of that building.

In this façade the ground-floor windows are square-headed, and divided into two lights by shafted mullions, having relieving arches over all. The division piers are massive, with alternating courses of different coloured stone. Above this is a rich string and balustrade. Over the piers rise coupled columns sufficiently detached from the main wall as to leave a shallow passage or balcony behind. From these shafts spring pointed arches supporting the front wall of the upper story, and having their soffits the full width of the passage below, thereby producing strong shadows without diminishing to any deleterious extent the light of the main floor windows. Coupled pointed lights, with a circle in the head, form the windows to the state-rooms. Over this bold arcade is a deep string, formed by square panels filled with shields having armorial bearings. Next above come the windows of the upper story, of two pointed lights, separated by coupled granite shafts. These are divided into six bays on each side, by statues resting on corbels, and protected by canopies. Above an open arched balustrade, resting on a rich cornice, and abutting against two dormer-windows; and the angle and central towers bring us to the roof, which is finished with a metal cresting and well-designed chimneys.

The angle-towers bounding this elevation on each side are octagonal, and fully equal to their position. They are more than semi-detached, consequently looking safe and capable of easy execution. The horizontal bands of the façade run round these towers, connecting them with the rest of the building. The balcony of the main floor is also returned: it is supported on short granite shafts, resting on the projecting weatherings of small, but wide, buttresses. These towers rise one story above the cornice of the façade, and are crowned with a boldly-corbelled cornice, having gargoyles at the angles. Above this is a pyramidal slated roof, having an open sort of bell-cote, of pleasing outlines, as a termination. Four dormer windows occur in the roofs, completing these charming pieces of composition. The Cooper-street elevation is not so satisfactory as the main front, the central tower being throttled on either side by tall slate roofs of an alarmingly high pitch.

The interior of the public hall is pleasing. The roof, which is of wood, curved at the sides and flat at the centre, has the look of being suited for concerts or debates. To increase the comfort of this hall, a large wooden ventilator, supported on strong iron trusses, rises from the centre of the ridge, marking the position of the hall from the outside. The council-chamber is octagonal in plan, lighted by a shallow glass dome, supported on pendentives springing from angle shafts. Two galleries are provided, that for the public being gained from the street, and the other, for the use of the press, from the main floor. A view is given of the mayor's hall, which forms a very beautiful composition. The design of the grand staircase is also successful, and, like all the rest, if not even more so, is very beautifully drawn and artistically coloured. The figures introduced are well studied.

In Albert-square the ground-floor is entered by two doors leading off the covered crrriage-way under the steps in the grand portal. Near these start auxiliary staircases, which lead to the main floor on either side of the grand staircase. Rooms for the porter are placed between these entrances, one of which is devoted to the use of the mayor. The treasurer's department lies on the right and left of the main entrance in Princess-street, the paving and highways on the Albert-square, and the gas department on the Cooper-street side of the treasurer. The water department occupies the greater part of the Lloyd-street front. The police will be found in Albert-square and that end of Cooper-street. A cartway leads from Lloyd-street by an incline to the basement, for the convenient delivery of coals and heavy goods. The main floor is gained from the street by the external flight of steps under grand portal; the auxiliary staircases on either side leading from the ground-floor. The great hall is gained from the ante-room by three doors, and the corridors, leading to the state rooms, branch right and left of same. On the left will be found the reception, dining, and mayor's rooms; to the right the committee-rooms. The council-chamber is placed next the cross corridor, on the Lloyd-street side of the great hall,—a position which the author considers more convenient than any other, and free from the disturbing noise of passing traffic. The areas are large; all the rooms and corridors are well and directly lighted. The estimated cost of carrying out this design is put down at 253,285*l*.

No. 7, "True to the Line," is by Mr. Thomas Worthington, Manchester, author of the new Albert Memorial in the middle of the square facing the centre of the main front of the proposed new building. He also built the Memorial Hall in the same square.

This design was placed third in order of architectural merit; Mr. Charlesworth's and Mr. John Scott's preceding it. This order applies, we think, only to the Albert-square front, as neither of the above-named gentlemen have treated the Cooper and Princess-street elevations in so masterly and artistic a manner. Take, for instance, the splendid group in No. 16, a view of Mayor's Porch and angle of Princess-street and Albert-square; also No. 15, view of Cooper-street end and Princess-street, with the massive tower at the junction of these streets, rising bold and dignified from the roofs. The broad and powerful treatment of this drawing reminds one strongly of the style of the elder Prout. We may call the style adopted the best period of Feudal French architecture, considerably refined. In the front elevation, as described in Mr. Lee's design, bold flights of steps, separated from the building by the sunk areas, approach a landing or terrace formed by the roof of entrance-porch to grand floor, and placed on the level of main floor. Two square-headed doors are placed under a lofty and shallow-arched portal, the tympanum over the doors being filled by a rose window. An elaborate gable, flanked by angle-piers with pinnacles, completes this grand portal. Above it rises the clock-tower, in five stages, before the machicolated cornice, parapet, angle-pinnacles, dormer-windows, and hipped and slated roof are reached. The façade between the clock-tower and flanking pavilions is divided into six bays. On the ground-floor are square-headed windows, with shafted mullions; on the main floor, pointed windows of two lights and traceried heads; above them a very plain space of considerable height must be passed before the string-courses to the upper stage are reached. This top story has triple lanced windows, with connecting hood-mould over, the division of the bays marked by statues on corbels and under canopies. Over the parapet come the dormers, having shafts rising from the foot-stones of the gable coping, and supporting figures or finials,—a piece of æsthetic construction that we highly object to. The flanking pavilions are very heavy in outline. An oriel window projects from the front face, and at the sides bay windows, terminated by a graceful pyramidal slated roof.

The plan is constructed on a totally different principle to that of the other competitors, the motive being a desire to finish the angles of the Albert-square front by a square treatment, and also to make the internal areas rectangular and architectural studies. To gain this he has sacrificed much space and light, at the same time taking great liberties with the external sunk areas. From the main front the ground-floor is gained by a porch under the raised terrace before described. This is connected by a wide arch with the vestibule under the clock-tower. This vestibule will fare little better than Mr. Waterhouse's in respect of light. On the other side of the main corridor rises the grand staircase; and right and left of it is a spacious vaulted ambulatory,—lighted by one of the arcaded areas before described. North and south of the main corridor are public entrances. On the left of the vestibule are placed the paving and highway, with the mayor's private entrance, and on the right the building and sanitary departments. In the centre, under the great hall, are placed the Court of Record, markets and weights and measures departments. Going from the mayor's entrance down Princess-street we find the treasurer's, and then the gas departments; two doors either side of the central block giving separate access to each. The large gas office has a separate entrance in Cooper-street; and a second door near it is provided for the large room of the waterworks. This latter entrance also leads to the interior corridors. A cart entrance is provided in Lloyd-street, communicating with the basement. On the main floor the arrangement of the state-rooms is very successful; and although this floor can be gained from the street by the external steps, the entrance vestibule can be thrown into the long suite of rooms. At the Albert-square corner is placed the dining-room, with its serving apartment; next the reception, ante-room, vestibule, large committee-room, ante-room, and council-chamber. Opposite the dining-room is the mayor's room, with a hall between. Off this hall is the mayor's staircase. Town clerk, assistant town clerk, and city surveyor occupy the Princess-street front; the committee clerk is placed by the cross corridor, at back of great hall. In Lloyd-street, next to the council-chamber, are placed the three committee-rooms, clerk of prosecution, and water department. The public room lies at right angles to Albert-square. It is gained from the vestibule, through a large hall, lighted from the tambour of a dome.

The upper flights of the grand staircase land at the sides of this hall. Corridor, at either side, and at the end of the public rooms give access to the same by seven doors,—a good and safe arrangement. The room is provided with a wagon-headed roof, divided into eight bays by curved ribs, and subdivided into small panels by moulded ribs. This shaped roof is not so good as some other exhibitions for true sounding properties. The windows are nicely designed, and the space below devoted to frescoes.

Out of twenty drawings, eight are perspective views, some being amongst the finest pictures in the exhibition. Estimate, including towers, &c., 275,000*l*.

No. 8, "Valentine," by Mr. Edward Salomons, of Manchester, known best by the theatres and warehouses that he has erected. The style he has adopted is free Italian, from a modern French point of view. In the centre of the main front is a wide square door, flanked by caryatides supporting a segmental pediment, filled with carving. On each side of this are massive rusticated dados the full height of the ground-floor, and relieved by a sunk niche holding statues. From these dados rise coupled columns, supporting a frieze and segmental pediment, filled with sculpture, the whole enclosing a semi-circular arched recess, containing three windows with carved tympanum over. Slight projections flank this gable, and, with the clock-tower, which crowns the whole, completes the central feature of this design.

The clock-tower rises by eight angle pilasters from a square base, having seated figures on pedestals at the angles. Under a semicircular arch, springing from these pilasters, is the clock

and below it three windows. A bold cornice comes next, having corbelled circular angles, supporting dumpy pepper-boxes. At this level the tower diminishes in width, and becomes octagonal. In the cardinal faces are windows, and the remaining are occupied by canopies containing figures. A curved roof, with cupola over, completes this very beautiful tower. Wide windows, with segment heads, and divided into bays by massive rusticated piers, having pilasters supporting balcony corbels, compose the ground-floor elevation. Over this comes a balcony. The windows to state rooms have two lights, divided by a column, with semicircular head, and circle over, the whole being enclosed within a semicircular arch. The next floor has very small windows, in shallow-face dormers, that spoil the whole façade. These windows being very narrow, leave the piers between about double the width of the piers below, a big-upon-little arrangement always to be carefully avoided. The roof dormer-windows are better. This elevation is bounded by circular angle towers. These contain the staircases to mayor's rooms and gallery in council chamber. They are divided into three bays by four columns, so slightly detached that they appear to support nothing but the statues above their cornice. Three arched openings on the level of roof-dormers, with a cornice and low circular dome, give a very dumpy finish to these towers. The other elevations are inferior to the above, and do not require description.

The front elevation is a marvel of geometrical drawing. The delicacy and precision of the lines, and the softness of the tinting, remind one strongly of some of the French drawings in the late Paris Exhibition, or the École des Beaux Arts. The principal perspective view is also beautifully drawn, and the statuary introduced is well composed. In the view the cornice of the nearest angle-towers is, however, dreadfully out of perspective, and gives quite a tipsy look to the tower, or that of a slouched hat with the broad brim pulled down over the ears.

The plans are worthy of careful study: they seem to adhere closely to the "instructions," giving, at the same time, the required accommodation in the most economical and convenient manner. On the ground-floor, the door of the vestibule under the clock-tower opens into a wide corridor, running right and left, and terminating in public entrances in Cooper and Princess streets respectively. Opposite the vestibule rises the first broad flight of the grand staircase, which, being covered by a glass dome, would amply light the corridor and vestibule. On the first landing of the grand staircase are placed two ticket-offices, forming a mezzanine under the corridor next the public room. From this landing, on each side of the central flight, and at right angle to the same rise staircases—finishing on cross-passages connecting the state with the business corridors. From the same landing, return flights give access to the state corridor. By this arrangement of parallel and cross passages, the state-rooms are isolated from the business portion of the building, but still having easy communication with the public hall. On the ground-floor, to the left of the grand staircase, are cloak-rooms. Additional retiring-rooms are provided above on each side of this grand staircase. To the left, and next to the vestibule, come the porter's room, Record Office, collector's office for treasurer's department. The angle-tower is devoted to the mayor's private staircase.

Turning down Princess-street are the public entrances before alluded to; next the treasurer's department; another public entrance in the centre of Princess-street elevation; and then the water offices, with their large room and separate entrance in Cooper-street. Opposite this public entrance is a semicircular staircase; stretching thence down Lloyd-street are the gas offices. In a cross building connecting the Princess-street with the Cooper-street block, are placed gas offices, a general staircase, and the paving and highway department. In the middle of the Lloyd-street front is the entrance for carts. On entering the internal area the cart would turn to the right, in order to reach the workshop for weights and measures on the high level, and by the inclined plane the smiths' shop below. Advancing past the smith's shop the cart would reach the level of basement, and by going through archways, especially provided, pass round the whole of the basement story. Next to the cart entrance come the scavenging offices, with a pay lobby for the men. Then the warehouse keys room entered directly from the street. Opposite to it the detectives' office and the rest of the police department. The angle-tower at the corner contains the stairs leading to the gallery on the council chamber. On the left of the grand staircase are the market offices; below the public room, the building and sanitary department. On the main floor the whole of the principal front is devoted to the state-rooms, forming a suite about 250 ft. long. Next to the mayor's staircase comes a serving-room, with stairs to kitchen, and rooms over; then the dining-room, reception-room, ante-room, and large committee-room, with serving-room, and stairs leading to basement.

The large hall is placed parallel to Albert-square having the business corridor which connects Princess-street with the Cooper-street corridors, running on one side, and giving access to it by three wide doors. An ante-room lies between the end of the hall and Princess-street corridor, and stairs in it lead on to the platform in the public room. By placing the public room in this direction the platform is brought near to the mayor's rooms. This plan is noticeable for the size of its internal areas.

Starting from the mayor's staircase and going down Princess-street, we find a vestibule with stairs to mayor's living-rooms, and provision for stowing away hats and coats. This leads into the state corridor and mayor's rooms. Next come the town clerk, assistant town clerk, committee clerk, and city surveyor. In the cross block, contractor's room, general staircase, and water offices. Turning down Lloyd-street from Cooper-street are water offices, porter's staircase, weights and measures offices, with stairs leading to work-shop below; then two committee-rooms, ante, and council chamber. All the rooms are well lighted, their general depths from the windows being very small. Two alternative arrangements to the above are shown. There is, however, a general prejudice against alternatives, from the idea that if the author has produced what he considers to be the best plan, it is difficult for him to arrange a better. Twenty-one drawings, including four perspectives, constitute this design; and the cost of carrying it out is estimated at 240,960*l*.

A NEW YORK UP-TOWN HOUSE.

A PAPER on "Domestic Architecture in America," by Mr. Gervase Wheeler, Fellow, was read at the Institute of Architects, on the 30th ult. In the course of it the writer said, the subject to which I would call attention is an ordinary New York up-town house, such as may be counted by hundreds not only in that large and fashionable city, but in all other new towns of the Transatlantic continent, remarking by the way that it is not offered as an example of what would suit our own mode of living, but as a specimen of the domestic buildings of America. The plan is a type of the class of private residences known as the "high-stoup," or genuine New York house. It is built upon an ordinary lot of 25 ft. frontage, and its arrangements present all the peculiarities of an American city dwelling. The block plan of the house shows a very considerable depth—occupying, in fact, nearly the whole of the lot, and is recessed more boldly from the line of pavement, or side-walk, as Americans call it, than our London houses generally are. This recess gives a better opportunity for the entrance-steps and landing, which are wide and handsomely arranged, the upper level forming a porch or "stoup," which feature gives the name to this kind of house. The hall-door leads into a vestibule, in which are inner glazed doors opening into the entrance-hall. Upon this floor are the reception-rooms,—differing from our customary arrangement which disposes them upon the floor above,—and these rooms consist of one very long saloon, divided by columns into two equal divisions, and in the rear is a drawing-room occupying the whole width of the house. Beyond this room—the American name for which is an "extension-room"—is a wide piazza enclosed with glass, and having steps leading to the garden. For party purposes the whole suite is thus extended to a very considerable space, the reception-rooms being each about 24 ft. by 16 ft., and the extension-room nearly 24 ft. by 20 ft., with a piazza of 10 ft. or 12 ft. more. The drawing-room is divided from the saloon by sliding doors, which shut into the wall when required, and are filled with ornamental glass.

Between the staircase-hall and the extension-room is an inner-hall, shut off by sliding doors, and containing a "lift" or dumb-waiter from the service-room below, enclosed shelves and other conveniences for the use of serving refreshments. This is lighted by glass in the sliding doors in the daytime, and by gas in the evening, which is of course the time when principally used. The height of this story is 14 ft., and the staircase is carried up in one continuous flight without the break of intermediate landings.

The floor below is thus divided:—

In front is the dining-room, forming the general living-room of the family, and corresponding in size with the reception-room over—24 ft. by 16 ft. In rear of this is a large private store-closet, and also a serving-room, which communicates directly with the kitchen. The kitchen itself is of considerable length, the rear end being fitted with washing-troughs and other conveniences for laundry purposes. A glazed door leads from this into an open space beneath the piazza, and in the floor of this are apertures filled with sheets of rough heavy glass to assist in lighting the cellar below. By the side of the laundry are a servants' bath-room and a water-closet, and the space not occupied by the staircase is filled with a store-room and several closets, American housekeepers always preferring a large number of separate enclosures, in which their necessaries may be kept distinct, to a general store-room. This story is 10 ft. high. Beneath this floor is the sub-cellar, which is always kept as little obstructed by cross walls as possible. The heating apparatus, whether furnace or boiler, is in the centre, with large coal-bunks in front; the rear being left open with larder, milk-room, and the like at the side. The heating apparatus I will presently speak of, merely calling attention to the large air-trough carried under the ceiling and opening into the area in front, by which cold external air is conveyed into the heating-chamber, and thence distributed over the house.

The chamber floors are above the reception-rooms, and are arranged exactly alike in each story;—one large room in front, a similar chamber in the rear, and smaller ones at the side; that at the back containing a bath and water-closet, with a large linen-closet, the peculiarity of which is that it is lined with cedar to keep blankets and furs from ravages by moths. Between the two large rooms a considerable space in the middle of the house is devoted to dressing-closets, which are so arranged as to contain washing and bathing apparatus, hanging wardrobes, drawers, and all other fittings for toilette requirements. These are, moreover, lighted and ventilated by an air-shaft, which runs up from this floor through the building, with a cover of thick glass raised a few inches above the level of the main roof, having apertures at the side with closing shutters for admission of air at will.

There are three such chamber stories, of the respective heights of 11 ft., 10 ft., and 9 ft., and in the rear the peculiar construction of the long sloping roof gives an additional story over one half, and affords sleeping-rooms for servants.

Although other forms of roofs may be seen, this mode of construction is that generally adopted. Its simplicity, and the ease with which snow or rain can be conducted to the one large over-hanging gutter in front, give it advantages which the lightness of the covering used—tin, enables American builders to avail themselves of. The bearings are principally on the side walls by means of stout purlins, and the rafters overlap and are pinned together in breaking lengths, and tied at the foot to the ceiling and floor joists, forming in reality a series of individual trusses from one end of the building to the other.

The gutter is formed in tin, and is carried upon very bold brackets, the front being treated as a cornice. This part of the front of the house is generally of wood, and very stoutly and strongly framed. I know this part of an expensive and often elaborately ornamented front *ought* to be of stone, and many who have only taken an ordinary peep at American town houses will believe that it *is*; but recollections of actual fact compel me to say that the American workmen paint and sand woodwork very cunningly, and all must not be taken as stone which looks, nay and even feels, like that more orthodox material. But it must be conceded that for this particular purpose wood is a good and proper material; the error is in making it appear what it is not. Iron, which has been occasionally used in this situation, has not, I fancy, found general acceptance—at all events, it had not to

the date of my last personal experience in America.

The average cost of building such a house as the one described, with a stone or marble front, and handsomely but not over-elaborately finished, would be, exclusive of the land, about three thousand guineas. The land, especially in some exclusively choice localities, would often be nearly as much again, and the rental of such a residence would not be less now than from six hundred to eight hundred guineas per annum,—in some situations very much more. The cost to purchase would be from six to ten thousand pounds. Houses built a few years back, and in the less fashionable parts of the town, may be bought for much less than these amounts; and in many very pleasant situations, not so exclusively "the rage," such can be obtained at more reasonable, though still very high, rentals.

A wish having been expressed for information as to the modes of artificial heating employed in the United States, I will endeavour to describe the various apparatus most commonly in use.

Stoves, fire-places, and the like, serving to heat only one apartment, I will pass over, and confine myself to such systems as provide warmth to the whole building.

The first of these is the hot-air furnace, by which air brought from without is warmed by contact with a large heated metal surface confined within a chamber of brickwork, and then distributed through tin pipes of large diameter to the floors of the several rooms above. This apparatus is placed in the cellar, and being comparatively inexpensive and very easy of arrangement, until a very few years back it was in almost universal use. Unfortunately many serious objections were found in the working of the system, which, however, I am inclined to attribute to defects in the apparatus and in the mode of its application, rather than to the principle itself. Hot-air furnaces there are of American make, both good and bad; and the bad being cheaper, and the people on the whole not understanding wherein the advantage of one piece of mechanism consists over another, the country has been overrun with cheaply made red-hot cast-iron appliances, that burn up and vitiate the air, discharging currents into the rooms highly charged with sulphurous and other irritating gases, justly bringing upon their use the condemnation of medical men. The pipes, too, are often contracted in their dimensions, and instead of the warm-air chamber gently giving out large volumes of moderately-heated fresh external air throughout the building, a thin scorching blast of air, almost red hot, is shot through the registers into the rooms, to the destruction of all health and comfort. So great a nuisance this became at last, that a general outcry was raised, and hot-air furnaces are now, I am told, not nearly as frequently used as they once were. But experience and a loving attention to a subject, always somewhat of a hobby, have satisfied me that the old Boston furnace of *Chilson's* principle, or its improvements and modifications introduced by *Boynton*, the New York successors of the original house, may be used in such a manner as to answer all the requirements of modern modes of heating.

Recent testimony from New York leads me, however, to conclude that furnaces are less frequently in demand, and the more costly modes of hot water and steam heating are supplying their place; still, with many instances fresh in my recollection, and the disinterested accounts of their continuance in satisfactory working, I do not feel inclined to admit that the evils of this mode of warming are identified with the system, but rather result from bad workmanship and improper application.

The best furnace that can be used is one which gives the greatest possible amount of heating surface, and at the same time is of such simplicity of construction as to readily allow its internal parts and flues to be frequently got at and cleaned. Its parts should consist of a large fire-lined pot of very heavy casting, and above and surrounding that the flue subdivided into such forms as will best multiply the heating surface, and ultimately discharge the smoke into the chimney flue as cool as possible, so that all the heat may be transmitted by radiation. All these parts are enclosed in an air-chamber of brick, which must be of large size, and of double walls so as to allow no waste of heat into the cellar. The cold air is brought by a wide wooden trough from the exterior of the building into this air-chamber, and after passing over the several heating surfaces, is carried by means of [illegible] pipes, varying in diameter from 8 in. to 14 in., or even more, according to the size of the rooms to be warmed, to just below the floor of the apartment. There it opens into a box, the depth of the space between the floor joists, and set in soap-stone in the floor. The top consists of a metal ornamental grating, below which are flaps working on centres, and moved by a rack and wheel so as to perfectly close or open gradually the apertures for transmission of the heated air into the room. Considerable care and judgment are required in conducting the tin pipes to the several levels, and in carrying them in horizontal directions. Workmen generally contrive to have them as nearly as possible in the centre of the house, and the pipes perpendicular; although there is no difficulty in leading them nearly in a horizontal direction, provided this is done at first on leaving the air-chamber, and then continuing them up to the required point of discharge. It will no doubt suggest itself that the longest pipe will draw off the heated air from the chamber with greatest rapidity; and, aware of this, the mechanics construct these of smaller diameter; but, with all their care, it requires a little nicety in the management of the valves in the registers to secure its fair share of heat to each room. In practice, however, it is very rare that all the registers are required to be opened at one time, and my own experience of domestic life in America reminds me that we rarely had any difficulty on this score, and that the furnace once lighted in the beginning of the winter generally remained without going out until April. Servants soon get into the way of managing a machine that saves so much trouble—no coals to carry up, no fire-places to sweep up and keep tidy: all the furnace asks is a good raking out and removal of the ashes in the morning, a few shovelfuls of coals about twice a day and banking up with cinders, and partial closing of the damper at night, to ensure a constant fire and a regular heat. The coal used for these hot-air furnaces is anthracite; but I know that they can be made, and have been, to burn bituminous coal, such as our own fuel, and that the accumulation of soot in the flues is no difficulty. Should our manufacturers be inclined to try the introduction of this system of circulating artificial heat through a building, the principal points to secure must be a large heating surface, an air-chamber of ample size, and pipes of such diameter as I have described.

Ventilation may easily be secured by adit flues or pipes from the rooms; in fact, the indraught of warm air will be too sluggish to raise the temperature of the apartment, unless means have been provided for its outflow; and this necessity compels an efficient ventilation.

Heating by means of circulating pipes filled with hot water or steam does not differ in its treatment in America much from our own modes; but a common practice now prevails of combining the principles of the hot-air furnace and the hot-water boiler. This is done by having the air-chamber heated by circulating pipes instead of by furnace flues, and the atmospheric air from without is introduced, warmed, and distributed throughout the building in the same manner. This system, however, has only been found to answer either on a small scale or as an auxiliary, unless great expense has been gone to in providing a very large boiler, which, moreover, requires an undue amount of room in the cellar. The temperature, too, generally proves insufficient for the severity of an American winter, although in the instances that I remember, in which it had been successfully applied, the quality of the warmed air thus generated was very soft and pleasant.

A new mode, I am credibly informed, now obtains very great patronage and favour. I am acquainted with its details, although it was only just commencing to attract attention when I last left New York. It consists of a boiler in the cellar, by which steam is generated and circulated at a low pressure throughout the building. The heating of the air is, however, effected not always or necessarily in a general air-chamber common to the whole house, but in special chambers attached to each room. This is done by admitting the steam into a radiator consisting of two thin plates of iron forming a case, stamped by machinery with curved indentations to increase the radiating surface, and of a size corresponding to the dimensions of the apartment to be warmed. One or more of these are used and are enclosed in a case which, in fact, forms the air-chamber, communicating with which is a tube carried along the floor-joists, and opening into the external air, through which is admitted the current of fresh air to pass over and around the radiators, and thence through apertures into the room. The whole of this apparatus may either be below the floor, with a register at top, the same in make to what has been described before, or it may be in the side of the room with an ornamental front. The inventor of this mode of heating suggests it may occupy the opening of the fire-place, and manufactures many highly ornamental gratings for that purpose, but the objection that so doing would cut off a natural and commonly existing mode of ventilation seems to me fatal.

The best apparatus for applying this mode of heating is that known as *Gold's Patent*, as manufactured by the American Automatic Steam Company, and perhaps the best practical testimony that can be offered in its favour is the fact that the New York Board of Fire Insurance have agreed that all the companies of that city will make a reduction of 10 per cent. on all risks where this mode of heating has been adopted.

Professor Silliman—a name, I am sure, well known to all scientific readers—gives very careful and laudatory testimony to the satisfactory results of an introduction of this apparatus into his own residence, and I read the names of many of the leading men of the present day as recording their equally favourable opinions.

It is not likely that we in England will ever willingly, or at all events generally, give up our cheerful-looking open fires in favour of any concealed mode of heating, however economical, convenient, or healthful: with us, all such appliances must be only auxiliary, as, for instance, to warm halls, corridors, and large rooms; nor do I know that in America has the system been so exclusively carried out as to permit but the one smoke-flue required by the heating apparatus, and the omission of ordinary fire-place opezings and flues to every room. I notice, however, that such an arrangement is strongly advocated there now, and builders are advised that no smoke-flues need be built but for the cooking range and heating apparatus, and that all rooms should have instead metal or glazed earthen tubes carried up in the walls for ventilating purposes only. It is an open question whether a building will gain or lose in an architectural point by omission of such well-known features as stacks of smoke-shafts above the roof, and meanwhile houses are built as heretofore, each with its own separate chimney opening to every room.

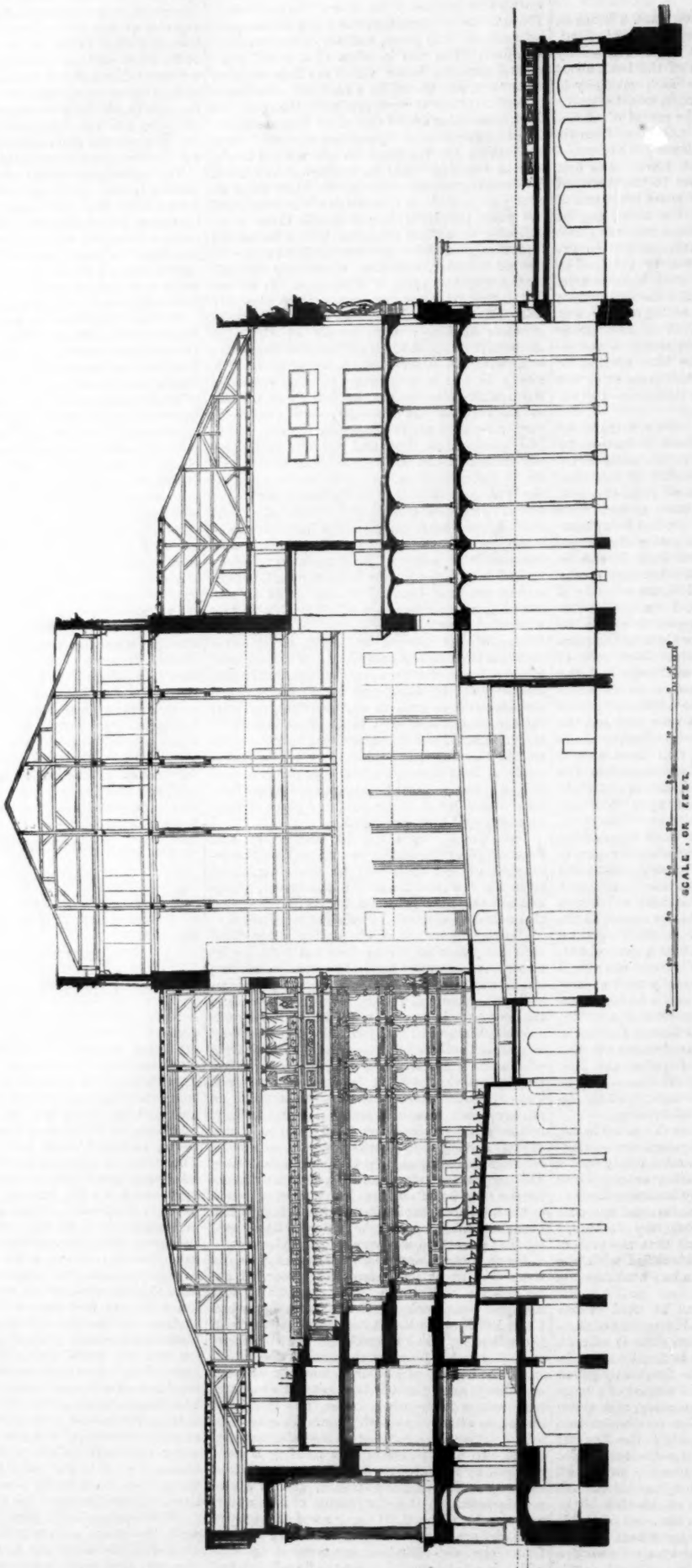
COMPETITIONS.

Hull Church.—In this competition the designs of Messrs. Adams & Kelly, of Leeds, have been selected.

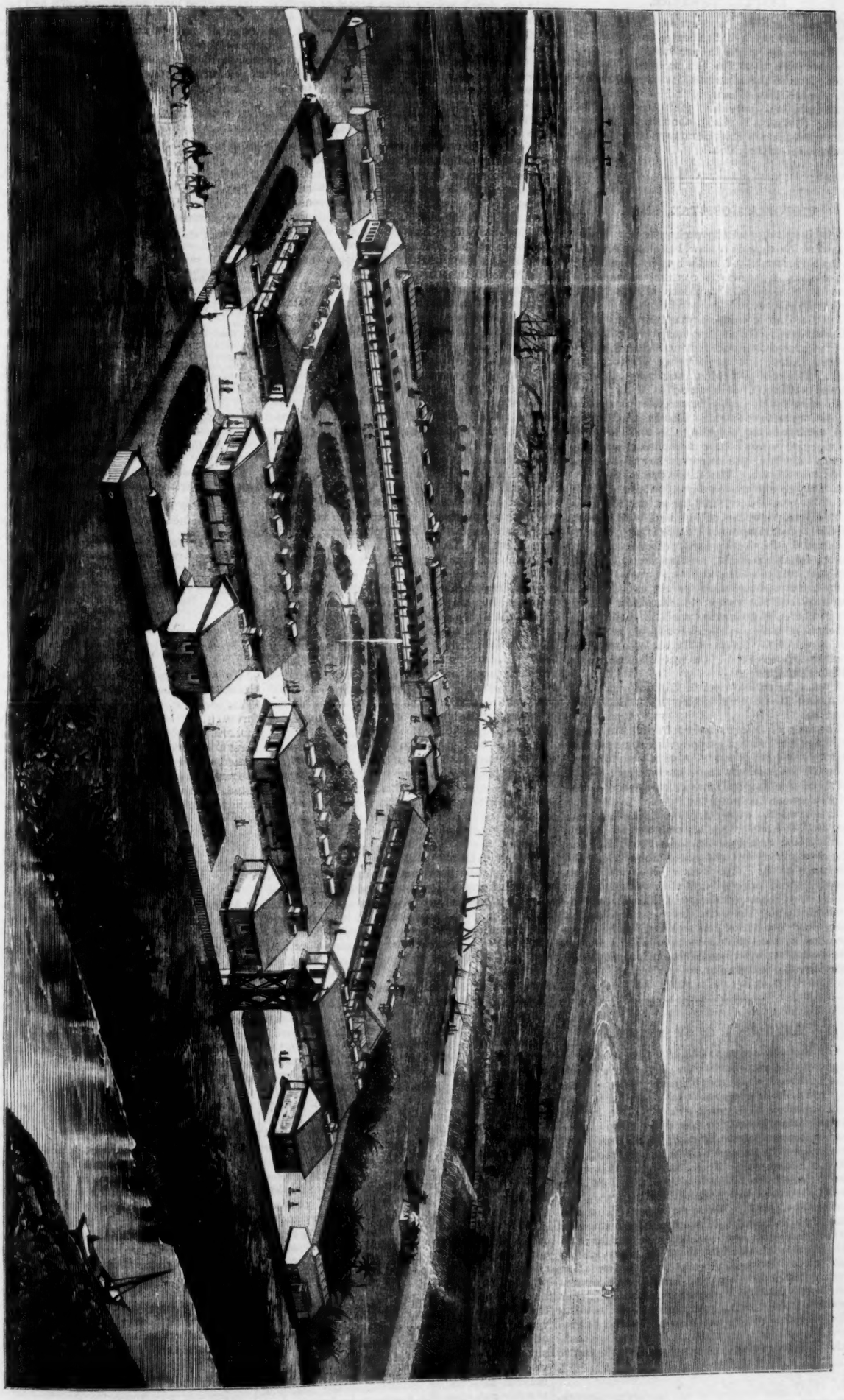
SANITARY MATTERS.

State of Sparkbrook, Birmingham.—A report presented to the Balsall Heath Local Board has confirmed rumours which have prevailed as to the unhealthy condition of the district about Sparkbrook. It appears from this document that fever has been very prevalent in the locality, and that the cause is to be found partly in the deficiency of drainage and of water supply, and partly in the slovenly habits of the residents. The streets in question are inhabited chiefly by labouring men, whose natural disadvantages are aggravated by pig-keeping, drunkenness, the practice of throwing refuse about the doorways, and neglect as to the cleansing of ash-pits. The two great difficulties are water supply and drainage. As there is no water laid on from the company's works, the people derive their supply from shallow wells, which are corrupted by the infiltration of foul matter from the undrained surface. These two influences acting in combination are clearly producing poisonous effects, for, in a two hours' visit, the committee of the Local Board heard of more than 100 cases of fever having occurred within the last few months. The Board cannot see a clear way towards removing the root of this infection, as they have no power to compel the use of other than well water, and have no access to an outlet for the drainage of this part of their district. Something, however, must be done. The Board, perhaps, require the aid of the Privy Council.

Whitehaven.—There must be something wrong with the water supply here: it was stopped altogether the other day in the higher parts of the town, and engines were stopped, locomotives deprived of their usual supply, and the inhabitants had to fall back upon the objectionable pumps, which are still scattered about the town.



THE NEW THEATRE, LEIPZIG.—*Longitudinal Section.*



VICTORIA HOSPITAL, SUEZ.—Colonel Collyer, R.M.E., Architect.

LEIPZIG THEATRE.

WE add, according to promise, a longitudinal section of the newly-built theatre in Leipzig, to the illustrations given in our last.* It should be instructive to notice the monumental character given to the structure, its complete isolation, the facilities of access, and the amount of accommodation provided for the executive. Leipzig (Leipsic, English), though the largest commercial town of East Germany, has a smaller population than Brighton.

VICTORIA HOSPITAL, SUEZ.

THIS hospital, and the accompanying buildings, of which we give a view, have been erected for the Government of India by Mr. John Kirk, of Woolwich, Government contractor, from designs by Colonel Collyer, late of the Royal Madras Engineers.

They are of a temporary nature, but it is believed they will last for many years. They are of wood, weather-boarded outside, and match-boarded inside, the walls being about 6 in. thick. The roof is double, the rooms having a wooden ceiling, then a space of 7 in., then again a wooden roofing covered with patent felt, and upon that slates.† The hospital wards have verandahs 10 ft. wide, the windows are glazed, and where other verandahs are less than 10 ft. wide, the windows have Venetian blinds in addition. The floors are raised 5 ft. from the ground on cast-iron pillars. There are ridge ventilators, foul-air extractors, Galton's stoves, supplies of hot and cold water, and drainage throughout. There is accommodation for forty-four soldiers, four officers, and four women in the hospital, as also for a hospital sergeant, six orderlies, and two nurses. There is further accommodation for six married non-commissioned officers and their families. There are kitchens, store-rooms, wash-house, laundry, bakehouse, stabling, dead-house, guard-room, and in addition, quarters for six officers, their families and servants. The whole is surrounded with a railing.

A ward for twenty men is 75 ft. long, 22 ft. wide, and 16 ft. high, giving 1,320 cubic feet per man.

The area of the ground containing the above buildings and central garden, with fountain and walks, is eight acres. There is an additional piece of land of six acres immediately to the north of the hospital, which has been reserved for kitchen-garden purposes.

These works were sanctioned in July and August, 1867, and were all constructed in this country, and then sent out and erected at Suez. The work in this country was done under the direction of Mr. John Baker, the contractor's manager and agent; and the work at Suez under the superintendence of Messrs. Joshua Constable and Charles A. Baker, with four foremen sent out from this country. The large number of men that have been employed upon the works were all foreigners, principally Maltese, Greeks, and Arabs.

SMALL-POX IN SHEFFIELD.

OF the eleven large English towns furnishing monthly returns to the Registrar-general, Sheffield has, since the beginning of the year, enjoyed the lowest annual death-rate, which has not exceeded 23·3 per 1,000. The death-rates for the same period, in the other towns, have varied from 23·4 in London, to 25·7 in Newcastle-upon-Tyne, and to 30·2 in Liverpool, and 31·0 in Manchester. Notwithstanding this satisfactory condition of the health of Sheffield, the weekly returns have from time to time given evidence of fatality from small-pox. This disease may, indeed, be said to have been more or less epidemic in this town for some months; and although it has not been fatal to the same extent as in Woolwich, Hertford, and a few other towns that have recently suffered from the same disease, a few deaths have been recorded in each week of the present year, amounting in all to forty deaths within the borough in the twelve weeks ending the 21st ult. When we consider that there are, in a population enjoying so low a death-rate as Sheffield, at least five recoveries to one death among those attacked by this complaint, it is very evident that small-pox has recently been, and is still, very prevalent in Sheffield. A sufficiently large proportion of these deaths from small-pox is stated to have occurred among unvaccinated children and adults to prove the neglect of this precaution in the town; but the returns give very incomplete evidence upon this important point. Some of the deaths were of infants who had not reached the age at which they are generally vaccinated, and doubtless many of the adults who are reported to have died from the disease "after vaccination," had not been vaccinated since infancy, when, in too many instances, an assurance of the success of the operation is neglected. The prevalence of small-pox in Sheffield has led to a correspondence between the military authorities at the barracks and the health Committee of the Sheffield Local Board.

It appears that early in February small-pox was prevalent in the barracks, and the staff-surgeon in charge communicated with the local authorities as to its prevalence among the surrounding civilian population, assuming that the soldiers had therefrom been infected, and suggesting that all cases should be removed to a special hospital established for the purpose. The chief sanitary inspector of Sheffield lost no time in making a special inquiry into the prevalence of the disease, and has since reported that he could find no cases within the borough in the direction of the barracks, except in one house, King James-street, where four persons had been attacked, and were in a fair way of recovery. This house, which was nearly half a mile from the barracks, is admitted to be one of several which are destitute of proper, or, indeed, any drainage. King James-street is a street only in name, says the report, not being formed, pitched, channelled, or drained, and is on the estate of the Sheffield Grammar School. Surely the borough surveyor or some other responsible officer of the corporation should certify that new dwellings are in a fit condition for human habitation before lives are risked by dwelling in them. It is somewhat strange that the chief inspector could only discover this one nest of small-pox cases out of the something like 200 that have occurred since the beginning of the year, but probably his inquiry only extended over that portion of the borough immediately around the barrack, although the soldiers were as likely to catch the infection from any part of the town to which they might resort. In the course of his investigations the chief inspector visited the barracks themselves, and reported to the health committee most unfavourably on their sanitary condition. The privies of the soldiers, in all parts of the barracks, were in a "disgusting and dangerous state;" some of them were structurally defective, and even those designed on a good principle had by neglect been allowed to get out of order. The staff-surgeon, who had in the first instance made the representation to the Local Board, accompanied the inspector during his investigations, and stated that he had only been in Sheffield two or three weeks; and although he believed there existed a "sanitary council" on the establishment, he was entirely ignorant of its organization. As this took place more than a month ago, it is to be hoped that this "sanitary council" has long ere this awoke to action; for in the face of the late liberal expenditure of public money for the sanitary improvement of the condition of the English soldier, it is somewhat disheartening to find such a condition of things existing in any of our barracks.

It really matters little whether small-pox first originated in Sheffield among its civilian or military population; but the inquiry has proved the existence of evils among both most favourable to the development of small-pox and other zymotic diseases. As to the neglect of vaccination, it is to be hoped that the military authorities insist upon all the soldiers availing themselves of vaccination, which is a comparatively easy task to the difficulties which lie in the way of enforcing that precaution upon the civil population. The sanitary committee of the town have appeared inclined to ignore the presence of the disease,—at any rate, the extent of its prevalence. This is surely unwise, and, in the face of an average weekly return of three deaths since the beginning of the year, is no longer very possible. It is, doubtless, owing to the general satisfactory condition of the health of the borough that the deaths have been so few; and consideration for the 200 persons who have been attacked, but recovered, should further stimulate the local authorities, civil and military, to use every endeavour to encourage vaccination, abate all nuisances liable to promote the prevalence of this or other epidemic diseases, and, moreover, to remove from themselves any stigma of supineness, with regard to the prevalence of small-pox in Sheffield.

PROPOSED SCULPTURE FOR THE UNIVERSITY OF LONDON.

THE Committee on the new building, Burlington Gardens, presented to the Senate the following recommendations:—

"1. That the four seated figures over the four piers of the entrance-portico should typify the four faculties of the University, as represented by Englishmen illustrious in Arts, Science, Law, and Medicine respectively.

2. That the six standing figures on the roof line of the central portion of the building should be in the Classical style, and should represent men of ancient times eminent in various departments of study included in the University course.

3. That the six standing figures in the niches of the ground floor of the wings should be portrait-statues of distinguished representatives of modern knowledge; those on the west wing Britons, and those on the east wing foreigners.

4. That the six standing figures on the roof-line of the wings should also be statues of distinguished representatives of modern knowledge; those on the west wing to be Britons, and those on the east wing to be foreigners,—the statues at the angles of the wings being grouped with such accessories as may give the required mass, instead of being double groups as proposed by Mr. Peanethorne."

The following names have been selected in accordance with those principles:—

Seated Figures over the Central Portico.
East—Bentham, Milton. West—Newton, Harvey.

Standing Figures on Roof-line of Centre.
East—Cicero, Galen, Aristotle.
West—Plato, Archimedes, Tribonian.

Portrait Statues in Niches of Ground Floor of Wings.
East—Cuvier, Leibnitz, Linnæus.
West—Locke, Bacon, Adam Smith.

Standing Figures on Roof-line of Wings.
East—Galileo,* Laplace, Goethe.
West—Hume, Hunter, Dalton.†

We shall hope to hear that the execution of the statues is entrusted to men of known ability.

In the first instance we believe Shakespeare formed one of the four "representatives of modern knowledge," but Lord John Manners, as First Commissioner of H.M.'s Works, having suggested a doubt as to the propriety of this position, the name was removed, and that of Hume substituted. A place will probably be found inside the building for a statue of the all-wise poet.

THE RUINED CHURCHES OF ORKNEY AND SHETLAND.

AT the last meeting of the Architectural Association, a paper was read by Sir Henry Dryden, bart., on "The Ruined Churches of Orkney and Shetland." He observed that there were four ways of estimating churches. The first was the ecclesiastical view, which aimed principally to obtain a building fit for public worship, but which was generally in favour of replacing a plain window by a coloured one if the money was forthcoming to do so; the second was that of the artistic gentry, upholding the beautiful and picturesque, and who thought every church ought to be made as attractive as possible; the third was that of the antiquarian, who considered it sacrilege to make the slightest alteration, and who believed that to remove an ancient stone or window was to lose a chapter of history; and the fourth was the view of those who, like himself, were in favour of conservation of architecture as far as it was possible. He alluded to a remark made by Professor Kerr on a former occasion, in which it was stated that when professionals made pets of amateurs, the latter generally became pests; and begged to differ from such an assertion, being fully persuaded that when wealthy people had to pay for the erection of edifices of any kind, however much confidence they might have in the architect, they generally liked to have something to say as to how their money should be spent. But he did not believe that there was any reason why there should be any enmity between the two.

With respect to the ruined churches of Orkney

* See pp. 245, 246, and 247, *ante*.
† We confine ourselves at this moment to describing the building.

* With astronomical accessories.
† With chemical accessories.

and Shetland, on which he was to address them, nearly all the buildings were of Norwegian origin; and as, since the time of the Reformation, the owners had allowed any one to desolate them, most of them were in a great state of ruin, and several had even come down in the last twenty years from the want of a little mortar being here and there judiciously employed. If it was asserted that they were not worth preserving because they were not very beautiful, the same argument would apply with respect to the Coronation-stone in Westminster Abbey, and to many other cases. They were, in fact, the materials of history, and should be appreciated as long as history was of any value.

He would first of all touch upon the churches of Orkney, and bring before their notice the ruin of St. Olah, at Kirkwall, dedicated to the great warrior saint of the country, who, he believed, was said to have killed something like a thousand men in a day. The original entrance was evidently in the south; and the building was in the form of a parallelogram. It was probably built by Bishop Reed some time between 1540 and the Reformation. At the church of Orpha there were the remains of what was evidently a circular nave, and it consequently must have been one of the six round churches in Great Britain. Most likely it was built between the years 1090 and 1160. There was a small chapel on the Brough, immediately in the centre; and it was old to notice how general was the practice in olden time of erecting sacred buildings on promontories and isolated points. This little chapel was also in the form of a parallelogram, being 20 ft. long by 17 ft. wide. Only 4 ft. in height now remained. There was one door and one window, the latter in the east end. Spread on the top of the ruin were ten huts, evidently for the benefit of pilgrims. The church on the Brough of Bursa was 57 ft. in length and 21 ft. in width; of the west end of it only 3 ft. in height remained. The sole access was on the west of the building, where there was one doorway. Now the question was,—Were there doors in this doorway? And if so, how were they hung? In some cottages skins were hung over doorways; and the Shetland gates were for the most part hung with staples. In his opinion, it was questionable whether there were any doors. He found some three-quarter angle recesses in the eastern part of the nave. Another singular thing was that the entrance to the chancel was only 4 ft. 2 in. wide, and there had evidently been a stair in this entrance. The chancel was 10 ft. 9 in. from east to west. One window only remained. The floor was level to the end of the apse; but in later times a reredos had been built, which had completely blocked out the whole of the apse. Steps had been also put to the altar. There need be no hesitation in assigning the date of this chapel, which was very like St. Margaret's Chapel in Edinburgh, to the year 1100 or thereabouts. The Church of Wyre was built of Winstone: it was 35 ft. 10 in. in length and 18 ft. in width. The nave was 19 ft. 2 in. by 12 ft. 10 in. There were two windows in the south side, but only one of them was original. The top of the nave reached now 11 ft. 5 in. above the floor. The chancel arch was 2 ft. 6 in. wide, and the chancel like that of Lipstone Church, Caithness, was nearly square. Enballow Church had not been known for many years, as it had been converted into a cottage. Its length was 52 ft. and width 22 ft. On the west of it was a building which, in his opinion, must have been a sacristy. The chancel was 12 ft. by 8 ft. on the inside. There was another building close by, 8 ft. by 7 ft. 9 in., on the south side of the church. He did not know what it could have been, but perhaps it was a porch. Some part of the church might have been built in the eleventh or twelfth century, but a new chancel had apparently been added in the fourteenth century. There were the remains of a chancel at Linterne, with an entrance in the south wall. On the Island of Egilsey, only 3 miles by 1 mile, there was a church with a round tower. The Norsemen had probably built this church, and then named the island after it. A chancel, nave, and the tower remained; indeed, they were in use up to fifty years ago. The size of the stones employed was very large. The nave was 20 ft. 9 in. by 15 ft. The doors had round arched heads. There was one window in the north, which had probably been filled up by a form of parchment instead of glass. On the west was a tower, which appeared to have been built at the same time as the nave, and which had apparently contained four chambers. Another odd thing was a vaulted chamber in the chancel, with an arch leading into it. It might possibly have been a muniment room, or a priest's room, for there was only one small window in it, facing the north. The church had probably been an important one, and might have been erected about the twelfth century. The tower was the only part which justified the assumption that the building was of ancient date, although in many respects it resembled the early Irish churches. It was, in fact, built after the traditional Irish form with some modifications, and was raised, he should think, after the Irish people were converted to Christianity in 998.

So much for the churches of Orkney. He would now introduce to their notice those of Shetland. The church of Culbinsbrough consisted of a nave, a north and south transept, and a chancel. It was the only cross church in Orkney and Shetland, except the cathedral of St. Magnus. There was an east window in it. In the churchyard had been found a grave-stone which had excited great interest, and which had given rise to a considerable amount of discussion. On one side there was the representation of a cross, and on it two nondescript beasts, who appeared to be devouring a man. On either side were two bishops with their mitres and pastoral staves, and underneath them was a man riding. On the other side there was a very well-executed interlaced cross, and also the two bishops again. There was also an inscription, but some doubt existed as to what it really meant.

The Ness was the only complete one of all the churches in Shetland, but in consequence of not being looked to, the whole of the chancel arch was gone. The nave was 20 ft. 5 in. by 14 ft. 10 in. It was used a hundred years ago. There had been two windows and two doorways on the south and west, both of which were original. The chancel was larger than any of the others. There was a sedile on one side, the only one discovered, and on the other side was an arch. To sum up, then, the various facts connected with these ruins: the doorways were nearly all in the west end; Orpha and Egilsey churches had windows with circular heads; four of them had no east windows; and, as far as could be ascertained, no platform to the altar—a state of things which would not be approved of by the Ritualists at the present day. No piscina remained, and the windows were very low. The gravestones were of four kinds; flat slabs, upright stones with crosses engraved on them, stones without any ornamentation, and upright stones cut into the shape of crosses. The coffins were formed of six smooth slabs of stone. The proportion of these buildings was, in his opinion, geometrical, and not arithmetical; this system extended to the elevation, at all events. The proportion was founded on three figures, a circle, square, and equilateral triangle.

Mr. White, in moving a vote of thanks to Sir Henry Dryden, observed that there was rather a singular fact connected with Egilsey. When he visited it some years ago, he was told that some 40 ft. had been taken from the top; and even then there was nearly 50 ft. of it left. Until Mediæval times, he remembered no case of a compartment that had been mentioned being added afterwards, for a sort of priest's room, but it might have been used to receive people who had no residence in the neighbourhood of the church. Sir Henry Dryden had alluded to Ritualists: he (the speaker) believed that the ritual of the earlier churches was exercised to a much greater extent in olden times than it was in these days. And this fact might in some way explain the meaning of the two towers to which Sir Henry Dryden had alluded, and for which he had been unable to assign any use. He thought it by no means improbable that they might have been used, one to read the Epistle, the other the Gospel from. With respect to the blocking up of the apse in the same church, it seemed to him that the general prejudice of the twelfth century was against the Norman apses. In England they seemed determined to get rid of it entirely. Although he had promised not to allude to the question of proportion, he would say just one word about it. There seemed to have been two squares in many cases; but, of course, it could not have been executed so accurately as in later days.

In answer to a question, Sir Henry Dryden said that in the Ness Church there were barholes in both the doors, and it was a puzzle to him how, if any one barred them up, he could get out; for the windows were not large enough to enable him to do so.

Mr. White suggested, that perhaps they were intended to bar people out, so as to afford a refuge in those lawless days.

Sir Henry Dryden accepted the proposition, believing that the principal occupation of the men of that time was to protect their own throats and cut other people's.

The president observed, that it was always difficult to express an opinion in the face of any one like Sir Henry Dryden, who had so carefully studied the subject. With respect, however, to the hanging of the doors, he did not see that there was any necessity for them to have been hung on the inside; they might have been suspended in the middle, like the swing-doors of the present day.

THE CITY TERMINUS OF THE CHARING CROSS RAILWAY.

AT the Institution of Civil Engineers on March 31st, the paper read was on "The City Terminus Extension of the Charing-cross Railway," by Mr. John Wolfe Barry.

This line was authorised by Act of Parliament, dated June 28th, 1861, and the works comprised (1) a bridge over the river Thames, (2) the Cannon-street Station, and (3) viaducts south of the river, for connecting the bridge over the Thames with the main line of the Charing-cross Railway.

The bridge over the Thames, the writer said, had been constructed to carry five lines of way from the south abutment to the pier next to the Middlesex shore, at which point the five lines branched out, and were connected with nine lines of way in the station. There were two footpaths, one on each side of the bridge, intended for the use of the public on payment of a small toll; but they had not yet been opened for traffic. The extreme length of the bridge between the abutments was 706 ft. This length was divided into five spans, the two side openings being each 125 ft., and the three centre openings being each 136 ft. in the clear on the centre line. The width of the straight portion of the bridge outside the footway parapets was 80 ft., and the width of the railway portion between the inside parapets was 61 ft. 8 in. The fan, which extended over the Middlesex opening, was widened out to 202 ft. at the abutment, and accommodated, in addition to the lines of way, portions of two passenger platforms, engine sidings, foreman's offices, &c. The height of the soffit of the bridge above Trinity high-water level varied from 24 ft. 8 in. at the abutments to 25 ft. 4 in. in the centre span. The object of this arrangement was to prevent the bridge appearing depressed at the centre. The height of the rails above the soffit of the bridge was 9 ft. 10 in.

The southern abutment was built on cast-iron caissons, sunk side by side, partly by means of divers working in helmets, and partly by dredging inside the caissons with a bag-and-spoon dredger. In the case of the north abutment, neither caissons nor cofferdams were used. Short lengths of ground were excavated at low water, a small "stank" dam of clay was employed, and the water being pumped out as the tide ebbed, the excavation was continued and the footings were got in. The piers were each formed of four cast-iron cylinders, placed in a line at right angles to the longitudinal axis of the bridge, and connected by two wrought-iron transverse girders at the top. The outside diameter of the cylinders was 18 ft. below and 12 ft. above the bed of the river; a conical reducing ring being introduced to effect the junction between the two diameters. The cylinder plates were fluted from 5 ft. below Trinity high-water mark up to the level of the ornamental cap mouldings. In sinking the cylinders the bed of the river was first smoothed by dredging; then the two bottom rings, together 13½ ft. in height, which was equivalent to the greatest depth of water at low tide, were put together on timbers, between strong timber guides, exactly over their destined position. This portion of the cylinder was next raised by a travelling crane so as to permit the removal of the supporting timbers, and was afterwards lowered into position. A third ring of plates was then added, and a bag-and-spoon dredger was employed inside the cylinder, to take out the mud and gravel. As the cylinder descended additional rings were bolted on until the London clay was reached, when the sinking was continued by ordinary excavation until the final depth was attained, which was from 59 ft.

to 65½ ft. below Trinity high-water mark. The cylinders were filled with Portland cement concrete up to the level of the bottom of the reducing ring, and on this brickwork, also in Portland cement, was carefully built for the full height of each column, being capped with large bed-stones 2 ft. thick. Each of the cylinders was weighted at the testing-line with 850 tons of iron. This weight was calculated to represent the dead weight of the structure above that line, a rolling load of 1 ton per lineal foot for each line of way supported by the cylinder, and a moving load on the footpaths. The order to remove the load was not given until it was ascertained that no subsidence had taken place for seven days. The greatest subsidence under the full test load was 2¾ in., and the least ½ in. The heaviest weight on the London clay at the bottom of any of the cylinders was 5·84 tons per superficial foot, with a rolling load as stated; and the heaviest weight on the brickwork in the cylinders was about 9 tons per superficial foot.

The particulars were next given in detail of the bed-plate girders, of the outside main girders, and of the intermediate main girders. The girders for the two side openings were independent of the other spans, but those for the three centre spans were continuous over the three openings. The flooring of the bridge was composed of flat plates of wrought-iron ½ in. thick, which were riveted to the top flanges of the main girders, and were further strengthened by angle or T irons; for as the floor of the bridge formed the station-yard, and was occupied by cross roads, as well as by the through lines, it was necessary that it should be capable of carrying the rolling load in any direction. Upon the flooring plates asphalte was laid, which was covered with an average thickness of 5 in. of ashes, as ballast, and on this the ordinary permanent way was placed.

The piers of the bridge, from the bottom of the cylinders to the bed-plate girder, contained in all about 2,500 tons of cast and wrought iron. The superstructure contained about 4,200 tons of wrought-iron in girders, floor-plates, &c., and about 1,100 tons of ornamental castings. The cost of the Cannon-street bridge, including the abutments, signal bridge, and all things connected with the work, with the exception of the permanent way, signals and signal apparatus, gas and water mains, amounted to 193,000*l.* This sum gave 2*l.* 15*s.* as the cost per superficial foot, and 250*l.* per lineal foot, or 50*l.* per lineal foot for each line of way, including the fan and footpaths.

The length of ground occupied by the Cannon-street Station, between the river Thames and Cannon-street, was 855 ft., distributed as follows:—The forecourt was 90 ft. wide, the booking-offices were 85 ft. wide, and the length of the covered portion of the station south of the booking-offices was 680 ft. The width of the station outside the walls was 202 ft., and inside the walls, at the platform level, it was 187 ft. The whole of the station was built on a substructure of brick piers and arches, excepting the booking-offices and the part which was over Upper Thames-street. At the crossing of this street, which passed underneath the station at about midway of its length, wrought-iron girders were used. Openings were left in all the piers to allow tramways to be worked throughout the basement if necessary; and provision had been made in the arches for an hydraulic lift to raise and lower the wagons. The cross openings north of Upper Thames-street were mostly carried up through the springing of the large arch, and were groined into it. The groining, which was 27 in. thick, was built in Portland cement, and the keystone was of Bramley Fall. It was adopted in consequence of the height of the ground not allowing communication between the different main archways, by transverse arches below the springing of the large arch. Without intercommunication the value of the vaults would have been commercially much diminished, and they would not have been available, as they were now, for parcels offices, stores, and railway purposes. The station walls were almost entirely of brickwork in mortar,—the only exception being the arch over Upper Thames-street, and a few courses at the top of the walls, which were laid in cement.

The main trusses of the roof consisted of segmental ribs with a tie-bar looped up. The clear span of the trusses was 190 ft. 4 in. The rise of the rib at the centre was 60 ft., and the rise of the tie-bar was 30 ft. The truss was, therefore, 30 ft. deep at the centre. The particulars of the different members were then given in detail. The ordinary distance from centre to centre of the trusses was 33 ft. 6 in., being the same as the distance between the centres of the piers of the substructure. In crossing Upper Thames-street, however, the distance apart was increased to 35 ft. 1½ in., in order to suit the abutments of the bridge over that street. The weight of a single truss was 47¼ tons. The parts of the roof not glazed were covered partly with zinc and partly with slating. A lantern, 22 ft. wide, extending nearly the whole length of the roof, was glazed on the top, and had the sides fitted with louvres, which afforded means of ventilation. Two movable timber stages, designed by Mr. J. Phillips, were used in the erection of the roof. One was as high as the top of the segmental ribs, and was employed in the erection of the trusses; the other was smaller, being low enough to pass under the tie-bar, and was used for painting, glazing, and finishing. The cost of the roof of the Cannon-street Station had amounted to 49*l.* 10*s.* per square of 100 superficial feet of area covered, measured between the walls. The cost of the roof of the Charing-cross Station was 39*l.* per square. In both instances the price of iron was high, the contract price for wrought iron in place in the roof being 24*l.* 5*s.* per ton.

The cost of the works of the City Terminus Extension was 505,336*l.*, and of the whole Charing-cross Railway, including the extension, 1,160,118*l.*; or, including land, somewhat more than three millions sterling. In this sum, it was to be remembered, were included about 4½ miles of railway for a double line, two large bridges over the River Thames, a considerable number of expensive street bridges, and two of the most extensive metropolitan termini. The importance of the traffic, which was not at present fully developed, might be gathered from the fact that, during the year ending the 1st of January, 1868, being the first year since the City Terminus Extension Railway was opened, about eight million passengers used the Cannon-street Station, of which number about three millions and a-half were local passengers between Cannon-street and Charing-cross. At the present time about twenty-six thousand passengers used the Cannon-street Station daily, and the South-Eastern Railway now conveyed about fifteen million passengers annually.

THE TRADES MOVEMENT ABROAD.

The Strike in Geneva.—It appears that the strike of the Genevese working builders has been met with a lock-out on the part of the masters. In a letter addressed to the workmen by the committee of masters, dated March 28, they say the firms in the building trade will be under the painful necessity of closing their establishments to-morrow. The working masons, stone-cutters, and plasterers have completely left their workshops. But few of the working mechanicians, founders, and locksmiths are at work, intimidated by those who have organized the strike. Under these circumstances there is a general stoppage in the building trade.

The chairman and hon. gen. secretary of the International Working Men's Association in London say, in respect to this strike and lock-out:—

"As the promoters of the International Working Men's Association never entertained the idea of establishing an international medium for the settlement of wages disputes, the general council has never yet been appealed to for advice, and has, consequently, no opportunity of instigating or provoking strikes. According to rule 11, every society joining preserves its existing organization intact. Hence it follows that every affiliated society manages its own special affairs without any reference whatever to the International Working Men's Association. Strikes were condemned on principle by the Geneva Congress; co-operative production was declared to be the only means to a permanent solution of the labour question. At Lausanne, the discussion of the question of courts of arbitration was recommended, with a view of putting a stop to strikes. The association, as such, never interferes in trade matters; but it uses its influence, when appealed to, in cases of strikes and lock-outs, to prevent the workmen of one country being used as industrial mercenaries against the workmen of another, and, in cases of need, it solicits pecuniary aid. So far from the general council having had a hand in the getting up of the Geneva dispute, it was not even aware that the building trades there were trying for a rise until, on the 3rd of March, a notice to that effect, published in the *Voix de l'Avenir*, was announced in the regular weekly meeting."

They also state that, in January last, the men appealed to their employers for an interview to discuss their grievances. The employers never answered their application, but set to work to form an association for their own purposes. In the mean time the men of each trade made out a "log," demanding a rise of about 10 per cent. upon their wages, and a reduction of the hours of labour from twelve to ten per day. After the condemnation of the Paris committee, the masters broke their silence, and told the men that they would not employ them on any terms unless they renounced their connexion with the International Working Men's Association.

The Belgian Disturbances.—In the Charleroi district the colliers are idle, and have come into collision with the military. For an extent of several leagues the coal-mines, factories, and furnaces are almost abandoned. The workmen complain that, while the masters wish to reduce wages, they will not lower the price of coal, immense quantities of which are lying at the pits' mouth. Hopes are entertained that nothing serious is likely to recur, but the miners are exasperated against certain individuals; and a cavalry major, who was obliged to order his men to fire on the mob, is in particular threatened.

ST. THOMAS AND THE MAURITIUS.

I ENCLOSE you a paragraph cut from the *Liverpool Mercury*, relative to the dangerous and unhealthy state of St. Thomas, in the West Indies.* The Government and the Royal Mail Company have incurred a fearful amount of responsibility and odium in consequence of allowing that island to have been used so many years as the central packet station, and which has been attended with so serious a loss of human life amongst that peculiarly valuable class of men, "our true British tars," who can be so ill spared from our mercantile fleets.

I have known this island ten years, and it would be interesting and instructive to know how many of "our hearts of oak" have been sacrificed in that hotbed of disease during that time. If any patriotic and humane M. P. would move in the House of Commons for a return upon the subject, he would render a benefit to his country, and I think there would be no difficulty in ascertaining the number of men lost in the steamers and vessels employed in the mail service. Its amount I am sure would rather astonish the country.

I have heard of as many as thirty men having been sacrificed in one vessel from yellow fever, while lying there a fortnight for the return of intercolonial mails, and of serious loss from other vessels; and if our marine is to be decimated in this way at unhealthy stations, we may well complain of the scarcity of able seamen. Most opportune and useful questions have been asked in the House of Commons relative to the fever which prevails at the Mauritius, and the answers given have been neither assuring nor satisfactory.

From a seven years' residence in tropical countries, I can unhesitatingly say that, with ordinary care, precaution, and forbearance, an Englishman will enjoy as good health there as in this country, even without the use of the nostrum "quinine;" as, during the time I was there I scarcely tasted it, and did not feel the need of it.

Of course, residents there must conform to the customs of the country and the necessities of the climate, which are somewhat opposed to those of this country; and if they are free livers, they cannot with safety give full scope to their favourite propensities.

In our tropical colonies generally efficient sanitary improvements are little thought of; sewerage is not approved, as drainage on the surface is preferred, with a few exceptions: at the houses cesspool abominations extensively prevail: and one cannot wonder when these objectionable and noxious practices exist in hot climates, that yellow and other fevers, cholera, &c., ride rampant over almost every one, particularly those not thoroughly acclimatized.

If disease be rife, they appoint additional medical officers, it is true, and plant the yellow flag at the doors of the houses to warn the unwary; when if it were not for the colour of the flag, the streets would often look like being

* "*A Fever-stricken Ship.*—Information has reached the Tyne of a sad calamity which has overtaken a Newcastle vessel, the *William Miles*, at St. Thomas, West Indies. Within the last two years an alarming number of Tyne shipmasters and seamen, whose vessels have taken coals out to the mail-packet station at St. Thomas, have died of yellow fever; and the intelligence which has reached the owners is that Mr. William Pollard, a Shields man, the master, and six of the crew of the *William Miles*, have been carried off by yellow fever, while nine more of the crew were at the time the letter was sent off lying ill of the disease in hospital."

decked out for a festival; but they do not strike at the root of the evil, the cause of this disease, which I firmly believe is of as easy remedy as in this or any other country.

I have no doubt if a competent sanitary engineer and medical officer were sent out to the Mauritius, they would find almost a total disregard of even the commonest rules and regulations for the preservation of the public health; and the time has arrived when I think active steps should be taken to improve the sanitary state of the cities and towns of our colonies, on a broad and comprehensive scale, similar to the one so advantageously carried out in this country.

It must not be left to the colonists themselves; they, like many of our town magnates here, are reluctant to introduce any change or improvement, particularly if it be likely to touch the pocket; the ruling authority, to make things pleasant, does not like to place itself antagonistic to them, and the consequence is, when disease visits them their towns are almost decimated or depopulated.

I have visited many of the most unhealthy of the cities and towns of the tropics in the western world, and, after a careful inspection of them, I have not seen one but in which the laws of sanitary science are abused or fearfully neglected; and there is not one of them, I confidently believe, but is capable of being made as clear and healthy as any place in this country; in fact, I would venture to undertake and guarantee to make them so at a very moderate expenditure.

If the remedy be so easy and close at hand for those "ills that flesh is heir to," as the poet says, let us at least endeavour to modify and relieve the sufferings of poor humanity.

B. B.

A NUT FOR THE PROFESSION TO CRACK.

Your journal, I am aware, is addressed to "the architect, engineer, operative, and artist." Though I have not the honour of belonging to any of those classes, I take sufficient interest in art to be a "constant reader" of it. I do not know whether you will allow me to offer a remark that may be of some importance to at least one of the favoured professions.

I can quite confirm the remarkable discovery made by "J. P. S.," that non-professional men are frequently irreverent enough to speak of architects in the way that he quotes,—"Oh, those fellows run us into such expenses!" But I think I can relieve his fear that "the cause lies deep in the English mind, in the utter severance of art from the affairs of practical life." Were this the real cause the case would indeed be lamentable; for, as English architects may be presumed to have English minds, our only chance of securing an architect who united artistic taste with practical knowledge would be always to employ a foreigner.

The cause, I believe, lies simply in the extraordinary and unreasonable way in which the remuneration of architects is calculated,—that is, by a charge of 5 per cent. on the amount that they induce their clients to spend in building. For instance, I may be prepared to spend 5,000*l.* in building a house. I may be quite willing to pay my architect 300*l.*, and I by no means think this would be too much, if he really gave a constant superintendence to the work; but I may not be at all willing to be drawn into an expenditure of 6,000*l.*, in order that my architect's fee may amount to 300*l.* No doubt it may be said that all architects are not only honourable, but disinterested men, and invariably prefer their clients' interest to their own. Be it so; but why expose them to constant temptation, and to the inevitable suspicion of acting in a contrary manner? No similar practice exists in other professions. I do not pay my doctor by a percentage on my druggist's bill, nor my solicitor by a percentage on the amount he can spend in retaining counsel. If we may look at the humbler ranks of life, we do not pay our housekeepers by a percentage on the butcher's bill, nor our butlers by a percentage on the wine-merchant's. Yet all these things would be just as reasonable as the system of paying architects by a percentage on the builder's bill. So long as that system continues, so long will people avoid employing an architect, if they can possibly help it.

The reason that there is no public movement against this system is that most men have nothing to do with architects, and few employ them more than once or twice in a lifetime, when their natural tendency is to get over the disagreeable necessity, and to have done with it, as in dealing with an undertaker. But there can be no doubt that the practice of building without an architect is increasing, and that the Greek is being supplanted by the English synonym, the "architect" by the "master-builder." A neighbour of mine is building a house of the value of 17,000*l.* without an architect. And I have heard that Osborne was built without an architect, the cause of which, no doubt, was "the utter severance of art from the affairs of practical life in the English mind" of the late Prince Consort.

I have no doubt that such considerations as I have submitted have occurred to many architects. But the system is too strong for individuals to break through: convention beats them down. However, I believe it will be well for the Institute to take into consideration the subject of professional charges, lest, while strictly upholding the etiquette of the profession, they may find that they have little work for the etiquette to operate upon.

A Country Gentleman.

THE BED OF BUILDING STONE.

In the letter from Mr. A. J. Hiscocks on this subject in your last number reference is made to a recent communication made by me to the Institute of British Architects, in which I considered among other matters building materials and their use. I did not then enter into detail, and little was said either in the paper or in the subsequent discussion on the special point now in question. I fear the space that could be spared in the *Builder* would not be sufficient to discuss it thoroughly, but I will take an early opportunity of putting before the profession such suggestions and explanations as I am able. It is a subject of some difficulty and of vital importance.

Meanwhile, assuming that every architect and builder understands in some measure the law and method of stratification by deposit from water, and the history of the passage of stratified layers of mud into stratified layers of stone, I think it will be perceived that enormous mechanical pressure must have been brought to bear at some time or other on all stones; and, I believe, that in determining the direction of pressure will be found the practical solution of the problem.

The natural bed of a stone originally, and before it has been upheaved and brought to the earth's surface, is clearly the plane of stratification. The original zenith of the stone must then be the zenith of the place where it was first deposited. But after upheaval the case is different. In fissile roofing slate, where the squeezing has entirely masked the original stratification, the bed of the stone is the cleavage plane, and the zenith a point vertically above the plane of cleavage.

In intermediate stones the problem is mixed. No doubt the microscope properly applied would afford a very useful key, but the application for practical purposes would not be easy. Whether also a stone turned inside out would answer its purpose in building, as well as a skin in resisting water, is a different matter altogether.

D. T. Ansted.

MACHINERY FOR JOINER'S WORK AND THE REDCLIFFE ESTATE.

Sir,—The leading article in the *Builder* of the 21st ult., showing the great saving in labour effected by the employment of a few of the most modern machines for joiner's work, has caused a great many builders to visit our works, as well as those of Messrs. Corbett & M'Clymont, in order to verify by personal observation the statements contained in the article in question.

As, however, many builders have taken exception to the statements in the article, on the ground that the time occupied in finishing the joiner's work, after leaving the machines, is put down at 6d. per hour, we beg to offer a few words of explanation on this point.

It is of course well known that the ordinary wages of skilled joiners in London is 8d. an hour, which is the rate paid by Messrs. Corbett and M'Clymont to their joiners; but, as a matter of *fact*, the rate quoted in your article is considerably in excess of what is paid for putting together and cleaning off the work after leaving the machines; for as all the operations requiring the greatest amount of skill are done at the machines, the putting together and cleaning off is done by apprentices and improvers, whose wages certainly do not average more than 20*s.* a week. The work turned out by the machines being all of an uniform width and thickness, and the various parts being planed up perfectly true and square in the trying-up machine, the time and skill required to finish it are infinitely less than where the stuff is all prepared by hand; and those who doubt whether the joinery prepared at the cost given in your article is equal in quality to hand-work prepared entirely by skilled joiners, at the full wages of 8d. an hour, can easily satisfy themselves on this point by availing themselves of the kind permission of Messrs. Corbett & M'Clymont to visit their workshops, and inspect the joiner's work upon the Redcliffe estate.

Samuel Worssam & Co.

"THE ROYAL ACADEMY AND THE ARCHITECTURAL EXHIBITIONS."

Sir,—In answer to the letter in last week's *Builder*, on this subject, signed "Adelphi," I beg to state that for some years past, through the courtesy of the secretary of the Royal Academy, some of the hanging committee of the Architectural Exhibition have annually been allowed to inspect the rejected architectural addresses, and have obtained from them some few, I regret to say very few, good drawings for their exhibition, which, from want of space or other reasons, the Royal Academy committee have been unable to hang on their walls. Your correspondent is in error in supposing that the hanging the *whole* of the rejected Academy drawings would contribute to the *success* of the Architectural Exhibition; and also when he hints that the representation of modern architecture has been almost entirely left in the hands of the junior members of the profession, as he will see by reference to some of the earlier and later catalogues.

The time required for selecting, hanging, and cataloguing the drawings, necessitates their being sent in early in April, in order that the Exhibition may be opened early in May, the time found to be most advantageous for the opening thereof.

If the profession generally would recognize the Architectectural Exhibition in the way that they ought to do, seeing that the space allowed for architecture is at the present so limited at the Royal Academy, and would send drawings of their works, no doubt a much better exhibition might be made; and with such, the interest of the public, a very important element in the success of any exhibition, be secured. If "Adelphi" will visit the ensuing Exhibition, I can venture to assure him that he will find considerable progress made.

Robert W. Edis.

WORKED STONE AND THE MASONS' UNION.

A builder writes:—

"Sir,—At the interview that representatives of the trade unions, including the masons' society, had with Mr. Gladstone in London, Mr. Gladstone asked the question, if a rule, only worthy of savages, was in existence, prohibiting worked stone from being sent from the quarries into the towns. This they most emphatically denied.

Perhaps Mr. Potter, or the secretary of the masons' society, will please explain the discrepancy between the treatment I have just received and their answer to Mr. Gladstone's question.

We have a rule in Manchester, that worked landings shall be introduced. As the only difference between steps and landings is the width, and I wanted about 3,000 feet, and had only a very short time allowed for the work to be done, I thought I should be quite within the rule to order these steps worked on one side at the quarry, time being more an object than a saving in the cost. The masons' delegate pays me a visit, and informs me that it is against the law, and that I must at once promise to desist from bringing any more, or the men would be drawn from the work. However this may surprise the public, it will not surprise your readers that I had to submit to this tyrannical interference with the management of my business.

I have a large contract on hand at the present time that is precisely similar to one that is going on in London, and the stone comes for both jobs out of the same quarry. The proprietor of that quarry sends all the stone for the London contract worked, and he applied to me to do the same. As the London contract was six months in advance of my contract, he was very well acquainted with all that was wanted, and would have executed the order in the most satisfactory manner. The price at which he proposed to do the work, compared with what it is costing me, would make a difference of 500*l.*, and I must say that, as a free-trader, I feel it a very great hardship that I cannot go to the same market as a London builder to buy either my material or labour. E. J."

STAINS ON WHITE BRICKS.

Sir,—Will one of your readers inform me of a receipt for removing the stains off white Suffolk bricks, caused by the rain running off the window-sill? A. E.

METROPOLITAN BOARD OF WORKS.

At the usual weekly meeting of this Board a report was brought up from the Works and General Purposes Committee, which stated that three inhabitants of Streatham had secured Tooting-common as a place of public recreation for the inhabitants of the metropolis, at a cost of 10,000*l.* At a public meeting of the inhabitants it was resolved that the Metropolitan Board should be requested to purchase all the rights in and on the common as soon as the parties owning the manor could at their own cost obtain the approval of the Court of Chancery for the sale of their interest in it. These parties sought no advantage for themselves, and were content simply to be reimbursed the outlay of 10,000*l.* and any further costs and charges they might necessarily be put to. The report recommended the Board to complete the purchase. The motion was unanimously agreed to. The chief engineer (Mr. Bazalgette) presented his monthly report on the progress of the Thames Embankment works. It was similar to the report presented at the last meeting, and reiterated the promise that the main and approach footways on the northern side will be opened to the public during the approaching summer.

SCHOOLS OF ART.

The Wolverhampton School.—A meeting, to which the leading manufacturers of the town and some of the friends of art had been invited, has been held in the committee-room of the Town Hall, "to consider the best way of furthering the interests of the school, and to carry out the suggestions of the Government in reference to technical education." The Mayor presided, but, despite the attention which the subject of technical instruction is receiving at the present time in other places, the invitation was by no means numerously responded to. Captain Loveridge (who has for the last few years been the chief supporter of the school) said the committee had resolved to call the meeting to consider whether it was not possible in some way to resuscitate the school and put it in something like a prosperous state. It was remarkable that in a district like this, with such a superior building, there should be only about 50 pupils, while the schools of Dudley, Stourbridge, Kidderminster, smaller towns than Wolverhampton, were in a state of prosperity, and while Birmingham school had 1,000 pupils, with others who were clamouring for admission, but for whom there was no accommodation. A resolution was passed to the effect that the meeting was of opinion that further exertion is necessary for the purpose of making the school more generally known among the artisan population of the town and neighbourhood, and that the heads of trades and manufacturers and schools, as well as the professional classes, be requested to use their influence so as to increase the number of pupils for instruction in various branches of practical art. The committee of the school were requested to adopt such measures as to them might seem necessary for carrying out the resolution.

The Wakefield School.—Mr. Walter Smith, head-master of this new school, which has been opened in connexion with the local Fine-art and Industrial Institution, recently delivered an address on art education to those interested in the subject. The classes of the school have commenced, and the address was intended to open out the subject of art education, its history, present condition, and objects, to the people of Wakefield. There was a large audience. Around the walls were hung specimens of the art examples which have been obtained for the use of the classes. The chair was occupied by the mayor, Mr. W. H. Lee, who on rising said it was a great satisfaction to the promoters of the local exhibition that the encouragement given to it by the public left them a handsome surplus—no less a sum, indeed, than 3,000*l.*, or a little over. The committee were anxious that this sum should be devoted to something that should perpetuate the object for which the exhibition was first promoted; and it was ultimately determined that a school of art and a museum should be founded in the town, and he was now happy to say that that school had been established in eligible premises, that had been purchased and fitted up for it. They had placed the institution in connexion with South Kensington Science and Art Department, and had secured the services of Mr. Smith, who had long been connected with art education, and who had shown a special interest in the promotion and encouragement of schools of art in different parts of the kingdom. Mr. Smith's name was well known, and his talent in this direction was acknowledged. The mayor added that he need not point out that it would be difficult to keep our position among the nations unless we amend our system of primary education, and also give to those who have gone through it opportunities for further improvement. It was for this object that they had determined to establish this school of art, and they should be glad if their efforts were appreciated by the town generally. Mr. Smith, in his lecture, explained what it was intended should be done in that new School of Art. The mayor had referred to the cause of the recent cry that had been heard for technical education. Now, what was meant by this phrase? In the first place he might say that, contrasting it with general education, it is the process by which a human being acquires the power of learning a trade or a profession by the acquisition of knowledge—the formation of the habit of thinking correctly, and reasoning with accuracy. Technical education is the direction in a particular channel of this acquired power. General education is a training of the mental faculties, as gymnastic exercises prepare the body physically, while technical education proceeds on the basis of general knowledge to develop the senses, to sensitize the natural powers, and to open out the special abilities of the individual in the particular direction in which they are required. Technical education stands as a connecting link between learning and labour, and, by uniting the two, confers what is necessary to all success—theory and practice in their true relations of learning saving labour, and practice rectifying, correcting, and testing theories. Thus, then, technical education ought to be directed to qualifying the student for the particular trade or profession it was intended he should pursue; and, looked at in that light, it embraced the studies pursued in a school of art as well as in science classes. The lecturer then glanced at the progress of art education in England; the importance of the knowledge of drawing to working men; and spoke of the Wakefield Industrial and Fine Art Institution, and the new school in connexion with it. Other towns, he remarked, had preceded Wakefield in establishing Schools of Art or Science Classes, but no other town—not even London, had deliberately set to work to bring both art and science, picture-gallery and museum—the active and present influence of direct teaching and the passive influence of galleries and scientific collections—under one roof and under local management.

CHURCH SERVICE STOPPED BY MOTHS.

A REMARKABLE plague of moths fell upon Sydney and St. Leonard's, Australia, last autumn. The Rev. W. B. Clarke, writing from the latter place under date of October 10th, 1867, says the moths first appeared in the church on the 14th of September, and for a month from that time had gone on increasing in numbers; and, although several bushels had been destroyed, the army was undiminished. On Sunday, the 6th of October, the state of the church was such, from the accumulated dust from the moths' wings, and the incessant swarms that were continually flying through the building, that divine service could not be held therein. More than seven days' hard labour had been spent in vain endeavours to subdue them; and applications of the strongest ammonia, sulphur-smoke, and other contrivances, used for hours, failed to drive them away; for as fast as one swarm was partly destroyed another succeeded. The neighbouring ground and trees were full of them; and when driven away, they mustered again and again. On the 10th of October, Mr. Clarke counted 80,000 on the windows alone; and in the tower and below the floor he calculated there were many millions.

A similar plague visited Australia in 1851, and again in 1855. From specimens forwarded to this country, the creature is ascertained to be the "Boogong" or "Gnarliong" moth (*Agrotis spina*). It is eaten by the aborigines, either baked in the ground or pounded into a paste for cakes.

STATE OF THE BIRMINGHAM WORKHOUSE.

THE local guardians, by a majority of twenty-two to thirteen—there were only thirty-five guardians present out of a total of 108—have resolved to build a boys' school only, at an estimated cost of 7,500*l.*; whereas last year complete schools for boys, girls, and infants were to have been built for 23,000*l.* The majority of twenty-two rescinded the previous resolution in favour of complete schools. The Poor Law Board, however, has yet to be consulted as to the new plans, and being decidedly in favour of the former arrangement, as our authority the local *Journal* remarks, the Board will not readily allow the guardians to recede from it, especially as the vote just come to was carried by only one-fifth of the whole number of guardians. Besides, the Poor Law Board may possibly find in the discussion as to the schools another reason for interfering—namely, the state of the workhouse. Dr. Barratt, a guardian and a medical man, gave the following account of the workhouse:—

"It was overcrowded all through. There was not a single classification that would meet the requirements of the Poor Law Board. The inmates were sleeping on the floor, two and three in a bed. The infants' department was a disgrace to a civilized community. The girls' department was the only one in which there was any approach to comfort, and a new bedroom was required there at once. The infirmary was overcrowded: the surgeon did not know what to do with the cases. It was the same with regard to the imbeciles and epileptics."

Mr. Jones, the late chairman of the Board, added something to this statement. He said that "the dining-room was occupied by what were called the 'sore-leg cases.' This was a most improper arrangement, and must be altered. The epileptics were wandering about the house instead of being confined to wards of their own."

Mr. Clay, a medical man, and one of the visitors to the workhouse during the last month, corroborated and even strengthened the remarks of previous speakers:—

"He must say that many portions of the house were in a most disgraceful state. In the lying-in ward the cubic space for each patient were 450 ft. less than it ought to be. In the epileptic ward there was not half the cubic space there ought to be for the number of inmates. In the bad-leg wards and the infirmary the beds were too numerous. The House could not be sufficiently relieved without adopting the old plans [for the schools]. This would render further building unnecessary for many years. He saw two and three children sleeping in a bed the last time he was at the workhouse."

Some of the so-called economists having denied certain of these statements, Dr. Barratt replied, "What I state is true, and, if driven to it, I may go considerably further."

The Poor Law Board will do well to institute an immediate and *public* inquiry into the state of the workhouse.

Books Received.

The Year-Book of Facts in Science and Art. By JOHN TIMBS, F.S.A. London: Lockwood & Co. 1868.

THE new volume of this serial contains a portrait of Sir Samuel W. Baker, accompanied with a pithy and interesting memoir of this distinguished traveller. Mr. Timbs has, with his usual discrimination and zeal, gathered and pressed in between his green covers a large number of facts exhibiting the most important discoveries and improvements of the past year.

Works in Terra-Cotta manufactured by John Marriott Blashfield, Stamford, Lincolnshire. Parts 1, 2, 3.

As a trade book Mr. Blashfield is issuing illustrations of numerous architectural details of which he has moulds,—chimney-shafts, chimney-pots, balustrades, parapets, and so forth. Part 3, just now published, is particularly interesting, including numerous doorways, windows, balconies, copings, plinths, terminals, consoles, and panels. Mr. Blashfield claims that his terra-cotta is made from the finest pottery clays, carefully ground and amalgamated with calcined flint, felspar, glass, and other substances, and brought into a stiff paste. After the terra-cotta articles have been modelled and moulded with this body they are dried in a warm building and then placed in a potter's kiln and burnt. The degree of heat required to thoroughly burn or partially vitrify the ware is equal to that obtained in the firing of porcelain. For all large thick pieces of terra-cotta the heat should be prolonged several days, so that the masses of material may be thoroughly fired to their centres. Many of the imitations of ancient terra-cotta work now offered to the public are little better than kiln-dried common clays, and will soon moulder and crumble to dust. So many works have been produced by this maker during the past twenty years,—including balustrades, Stafford House; frieze and capitals, Duchy of Cornwall Office; large vases and terminals, Buckingham Palace; statues and fountains, Sydenham; terminals for the Royal Italian Opera House; cornice, capitals, panels, &c., London and North Western Station, Broad-street, London; and the architectural dressings and details, Sun Fire Office, Charing Cross;—that it cannot be difficult to test the goodness of his ware.

Rating of Railways. By EDWARD RYDE, Surveyor. London: Cassell, Petter, & Galpin. 1868.

THE little pamphlet before us is, it seems, to form part of "A Handy-Book, in a Series of Letters," wherein Mr. Ryde intends treating of various professional subjects, such as land measuring, levelling, compensation cases, parochial assessments, rating of water companies, light and air questions, and so on; and as each letter will be complete in itself, and there is some uncertainty as to the time within which the whole of them may be finished, those which possess special interest will be published in pamphlet form from time to time.

In the letter before us the accepted mode of

rating railways is set forth clearly and compendiously, cases which establish the various points being quoted. Mr. Ryde has had plenty of experience personally, and speaks with authority.

VARIORUM.

"BOARD of Works for the Limehouse District: Report of Medical Officer of Health for the Year ending Lady-Day, 1867." This is virtually a treatise on the causes of cholera, one chief object of the author, Dr. Orton, being to disprove the truth of the conclusion that foul water produces cholera. —— "Board of Works, Whitechapel District. Report on the Sanitary Condition of the Whitechapel District for the Year ending 28th December, 1867. By John Liddle, Medical Officer of Health." The rate of mortality in the Whitechapel district for the last year was 28 per 1,000, or 1 in 41 of the total population; and indeed, including the London Hospital, it was 29 per 1,000, or 1 in 34 of the population.—— We find a trade pamphlet, amongst those before us, descriptive of Herring & Son's self-acting apparatus for warming buildings, manufactories, &c. The apparatus is worked in connexion with a high-pressure steam-engine, and it is self-acting; and, apart from the cost of working the engine, which is not supposed to be erected for that purpose, there is no cost connected with the working of the warming apparatus; the hot water being supplied from the waste water of the engine-boiler and returned to it again, so that the water supplied to the engine becomes pure distilled water, obviating all encrustation of the boiler, and saving fuel by the supply of water already heated.——"Report on Health of Liverpool." The report of Dr. Trench, the Liverpool medical officer of health, has been issued in a printed form. The death-rate of the borough for the past year was 29·4 per 1,000, or 3 per 1,000 less than the average during the previous ten years. The following particulars refer to the overcrowding of houses during 1867:—

No. of rooms found overcrowded at night...	1,261
Total cubical area of the above rooms	974,758 ft.
No. of adults found sleeping in the said rooms	3,559
No. of children below fifteen years	2,630
Average cubical area for each individual '...	157 ft.
Average cubical area for each adult (including therein two children under fifteen years as one adult)	200 ft.

As our readers know, this is an evil which the Corporation and its able medical officer are actively engaged in mitigating, as also is the midden and privy system. In 1867, the local Health Committee ordered the conversion of 4,371 privies into water-closets.

Miscellanea.

TECHNICAL INSTRUCTION: MR. WHITWORTH'S MUNIFICENT OFFER.—Mr. Whitworth has offered to found thirty scholarships of 100*l.* each for the promotion of education in engineering and mechanical science open to competition amongst all natives of the United Kingdom; and his splendid offer has been accepted by the Department of Science and art. Mr. Whitworth will manage the proposed trust during his lifetime, and the President of the Council of Education thereafter. This must be equivalent to a gift to the nation and to science of no less than 100,000*l.* The Lords of Council on Education suggest that technical instruction "will be rendered easy if the munificent example set by Mr. Whitworth shall be extensively followed by others."

MR. HENRY LESLIE'S CONCERTS. — The last two have been particularly successful. At the concert on the 2nd there was a medical certificate instead of Mr. Sims Reeves, and an apology for Miss Angèle; but Mr. Hallé was so perfect, and the choir sang so charmingly, that every one was satisfied. Mr. Cummings took the place of Mr. Reeves, and sang with so much taste and excellence, that all forgot to be disappointed. Mr. Cummings is deservedly rising high in public estimation. On the 6th the concert consisted of sacred music. Mr. Sims Reeves was in admirable voice, and never rendered with deeper pathos and more perfect expression the recitative from *Jephthah*, "Deeper and deeper still," and the exquisite air "Waft her, ye angels." Mr. Leslie's fine trio, "Love, gentle, holy, pure," by Mdlle. Carola, Madame Gilardoni, and Madame Patey-Whytock, was beautifully sung. These concerts will be resumed on the 29th inst.

CIVIL SERVICE ESTIMATES.—The sum required to be voted on account of the civil services for the year 1868-9 is 15,230,479*l.* the votes for the previous year being 14,190,353*l.* There is a considerable increase in the department of public works and buildings, the vote on account of embassy houses showing an advance on the previous vote of nearly 26,000*l.*; and on account of harbours of refuge there is an excess of 16,274*l.* The Commissioners of Works in England will require an advance on last year's vote of 14,110*l.*, for the maintenance and repair of Royal palaces. The other principal items of increase are for public buildings, 6,352*l.*; Royal parks and pleasure gardens, 12,198*l.*; public record repository, 20,580*l.*; enlargement of the National Gallery, 18,060*l.*; Burlington House, 40,000*l.* The Government also requires a new vote of 10,000*l.* for a natural history museum; 10,000*l.* for the new Home and Colonial Offices; and 20,000*l.* for the Glasgow University. There is also an increase of 32,962*l.* in the estimated cost for the year of public buildings in Ireland.

THE THAMES EMBANKMENT AND RAIL.—Some further information respecting the Embankment and the railway is contained in a letter which Mr. Bazalgette has sent to the *Times*. From Westminster Bridge to the east end of the Temple Gardens, a length of 5,807 ft., the Embankment is practically completed. It now only remains for the railway contractors to cut their trench through it from end to end, and build their railway within that trench. It will then be arched over, and the roadway formed on the top. From the east end of Temple Gardens to Blackfriars Bridge, a length of 853 ft., it is not proposed to form a solid embankment; but the road will for this length be continued upon arches up to Blackfriars Bridge. The river will flow through and barges will pass under those arches up to the wharfs as heretofore, and the water space between the viaducts and the wharfs will vary from 100 ft. to 125 ft. in width. There will be no connexion whatever between the works of the railway and this viaduct. At the east end of the Temple Gardens the railway will leave the Embankment, and be carried close in front of the wharfs to Blackfriars Bridge. The railway and the viaduct will for this length be two perfectly distinct works, with a wide water space flowing between them.

THE NEW BRIDGE AT BLACKFRIARS.—The structure, it may be remembered, is to consist of five arches, namely, two of 155 ft. span each, two of 175 ft. span, and one of 185 ft. The width of the roadway on the bridge, including the footpaths on either side, will be about 75 ft., and the average gradient will be 1 in 40. Some of the foundations have been sunk 52 ft. below high-water mark—in other words, a long way into the London clay; and with respect to two of the piers which are to occupy the sites of the old ones the work has been necessarily tedious and protracted, involving, as it did, the uprooting of the old foundations before those of the new piers could be laid. On the Surrey side of the river, at which the erection of the structure commenced, the works are in a very forward state, much of the granite masonry being finished, as also the ribs and ironwork of the arches. The fourth pier, or the one next to the Middlesex side of the river, has been raised nearly to the half-tide level; and with respect to the third pier the caissons have been sunk to the extreme depth and filled in with concrete, except the two end caissons, which are being gradually lowered to the proper depth. Four of the piers will be ornamented by two columns each of polished granite, about 11 ft. or 12 ft. high, and some of them 23 ft. in circumference. The granite is being quarried in the Isle of Mull, and conveyed by sea to Glasgow, where it is adapted and polished by machinery, and removed thence to London by railway. Each column consists of three blocks of granite, weighing from 11 tons to 12 tons each block, and each column costing upwards of 500*l.* The drawback to the structure will be the railway viaduct on the eastern side, which will greatly mar the appearance, running parallel with it, as it does, at a distance of 50 ft. If all goes well the new bridge will probably be opened to public use about the spring of next year. On Monday last, the chairman of the Bridge-house Committee, in the presence of his colleagues; of Mr. Brand, the controller; and of Mr. Joseph Cubitt, the engineer; Messrs. Thorne, the contractors; and Mr. Briant, the engineer of the contractors, publicly laid the foundation-stone of one of the remaining piers, with the accustomed ceremony.

PROJECTED IRONWORKS AT MARYPORT.—Messrs. Gilmour, Brothers, & Co., of Glasgow, have made arrangements for erecting smelting furnaces at Maryport. The site they have selected consists of about twenty acres, on the Bent Hill, west of Norman-terrace. The plans exhibit four blast furnaces, and it is estimated that one furnace will require nearly 1,000 tons of material per week, and employ perhaps 100 hands.

REPORT OF ST. PANCRAS GUARDIANS.—A report by the chairman, Mr. W. H. Wyatt, to the Board upon the proceedings of the guardians for the last nine months has been printed for circulation, from which it appears that some sweeping amendments have been made in the management and treatment of the poor. A lax system had prevailed, and new officers were appointed to carry out the new system resolved upon by the guardians; and it would appear, with decided advantage both to the really deserving poor and to the ratepayers. They have since, however, announced the necessity for a heavy rate, which is exciting some commotion; but the rise of rates is not limited to St. Pancras.

BRICK BURNING.—In the case of *Roberts* v. *Clark*, before Sir W. P. Wood, as Vice-Chancellor, it was held that where a nuisance had been of more than twenty years' standing, but with temporary interruptions, the party asserting the right to continue it was bound to show that it had been exercised at least in the first and last year of the period of twenty years, in order to preserve it from being lost. The Vice-Chancellor said it was not necessary to prove that any special sickness had resulted to plaintiff or his family from the effluvia arising from the brick-burning, nor that the vapour was more than usually injurious or offensive. It had been held at law that brick-burning carried on in the ordinary way was a nuisance to the persons living within the limit affected by it; and it was such a nuisance as the Court of Chancery would restrain by injunction.

DESTRUCTIVE FIRES. — The Gilnow Cotton Spinning Mills, Bolton, have been totally destroyed by fire. The flames broke out while the mills were in full operation, and in half an hour the entire structure was brought to the ground. All the workpeople got out in safety. The damage is estimated at 70,000*l.* The premises are largely insured.——A fire has occurred at Eastwell Park, near Ashford, the seat of Earl Winchelsea, producing damage to the extent of 10,000*l.* or 12,000*l.* It broke out in the north side of the main entrance and above the dining-room, schoolroom, and governess's apartments. The roof gave way, and almost simultaneously the expansive glass dome, and the grand staircase fell in; the former burying the contents of the school room and governess's apartment, and the latter a number of valuable books and other costly property. The result of this was that the flames were communicated to the dining-room beneath, and valuable pictures, some family portraits, and many articles of *vertu*, together with costly furniture, were destroyed. Great fears were entertained that the entire mansion would be sacrificed; but luckily the fire was confined to the dining-room and apartments above.

RATS AND MICE.—If the police are awanting in expertness when most needed, they make up for it by being very expert where least needed. They lately brought before Alderman Hale a ratcatcher named Samuel Humm for poaching in the sewers without leave asked or given. He had just come up through a manhole with thirty rats, in a bag. Alderman Hale fortunately did not take the policey view of the matter, and not only discharged the prisoner, as one who was doing good by extirpating rats from the sewers and houses of London, but also promised to use his influence in obtaining for him a rat-license to sport in the sewers for the future as often and as long as he liked. We only hope that Humm will not have a monopoly of the business.——Certain hungry mice having gnawed a piece of gas-piping in a house at Warrington till the gas escaped, a disastrous explosion took place; two persons were badly burnt, and serious damage was done to windows, ceilings, walls, and flooring. Gas-plumbers have a bad practice of rubbing gas-pipes over with grease, or strapping them with greasy rags, where they leak slightly. This must induce mice and rats to chew the lead. The gas-men's practice is one they ought to eschew, for it clearly leads the rats and mice into temptation, and their betters into danger.

NATIONAL PORTRAIT EXHIBITION, SOUTH KENSINGTON.—The collection of portraits will be opened to the public on Monday next.

DISCHARGE OF GOVERNMENT WORKMEN.—About 200 workmen of various grades were on Saturday discharged from Woolwich Dockyard, and 800 mechanics and labourers will leave the establishment at weekly intervals.

TWISTED WROUGHT-IRON BARS.—We observe that wrought-iron bars, generally of + section, but twisted as it runs along, are being made by Messrs. Macnaught, Robertson, & Co., of Bankside, and recommended by them as particularly applicable for balustrades, balconies, balconets, verandahs, railings, columns for shop-fronts, stanchions, circular stair-posts, and ornamental iron-work generally. Although light, they are said to have considerable strength.

PROPOSED COLLEGE FOR WOMEN.—A conference was held on Saturday at the Architectural Gallery, London, to consider the proposed establishment of a college for the education of advanced female students. The Dean of Canterbury occupied the chair, and a large number of ladies and gentlemen attended. It is intended to place the college in a healthy locality between London and Cambridge, thus putting it within reach of the best teaching in all the subjects of the college course. It has been roughly calculated that a building with accommodation for 100 students may be erected at a cost of 30,000*l*.

CORPORATION MODEL LODGING-HOUSES FOR NEWCASTLE-UPON-TYNE.—At a recent meeting of the Town Council a report was adopted in favour of the Corporation erecting model lodging-houses for the poorer classes. The mover of the resolution said, after detailing the history of the movement, that the estimated cost of the lodging-house would be 4,433*l*.—3,500*l*. for the cost of the building, and 933*l*. for the cost of the ground. He believed it would pay 5½ per cent. They could obtain the necessary money from the Loan Commissioners for 4 per cent., and in this way the council would make 1½ per cent. Another of the council said it was a great experiment, and strongly advised the council to follow as far as they could the example of Mr. Peabody in London. He believed they would, by carrying out the scheme, provide better houses for poor people.

TELEGRAPHIC PROGRESS.—The adoption of the telegraph by the Government will be a decided step in telegraphic progress. The Bill to enable the Postmaster-General to acquire, work, and maintain electric telegraphs is not binding on the telegraphic companies so as to compel one and all of them to hand over their telegraphs to the Government, but it is compulsory in certain circumstances on the Postmaster-General to purchase telegraphs that may be offered. He is also authorised to negotiate with companies for the purchase of their lines of telegraph with money to be given by Parliament from time to time for the purpose. The charges for messages are not to exceed one shilling within the United Kingdom for twenty words or less, exclusive of names and addresses, and sixpence for each additional ten words or less. There are arrangements and restrictions also as to porterage and transmission by post, &c.

THE BIRMINGHAM STATUE OF SIR ROWLAND HILL.—Some three years ago a public subscription was set on foot at Birmingham, to provide for the execution of a statue of Sir Rowland Hill, as the promoter of penny postage. A commission was given to Mr. Peter Hollins to execute a marble statue at the price of 950 guineas. The statue has just been completed, and is now about to be sent to the approaching exhibition of the Royal Academy. It has been cut out of a block (three tons weight) of Carrara marble, and the sculptor has been fortunate in securing stone of the finest grain, and without flaw. In the right hand Sir Rowland holds a roll of penny postage stamps. The figure is 6 ft. 8 in. in height. The statue, from the fine quality of the marble, is too delicate to stand exposure to the weather, and will be placed indoors. The late recorder of Birmingham, Mr. M. D. Hill (brother to Sir Rowland), and other members of the Hill family, who have seen Mr. Hollins's work, pronounce it a characteristic likeness, whether as regards feature, expression, or attitude. It has just been determined by the Government to go on with the erection of a new General Post-office at Birmingham, and it is not improbable that this may be the ultimate destination of the statue.

TENDERS.

For Kingston-on-Thames Workhouse Infirmary. Messrs. T. H. Rushforth & C. L. Luck, architects. Quantities supplied by Mr. Northcroft:—

Collings	£9,476 0 0
Little	8,426 0 0
Myers & Sons	8,259 0 0
Foster	7,976 0 0
Hart	7,900 0 0
Saunders	7,890 0 0
Nightingale	7,865 0 0
Gibson	7,777 0 0
Higgs	7,777 0 0
Simpson	7,765 0 0
Haward	7,750 0 0
M'Lachlan	7,734 0 0
Wells	7,692 0 0
Gammon	7,357 0 0
Hatten	7,300 0 0
Lacy & Flaxman	7,223 0 0
Manley & Rogers	7,123 0 0

For a pair of semi-detached cottages, to plans and specification, and quantities supplied by Mr. J. T. Matthews, architect:—

Peters	£498 0 0
Scraggs	420 0 0
Holdsworth (accepted)	399 0 0
Winkworth	339 10 0

For the erection of villa residence, at Epsom, Surrey, for Mr. John Barnard. Mr. A. F. Williams, architect:—

Hooker	£2,397 0 0
Cooper	1,588 0 0
Chuter, Brothers	1,404 0 0
Andrews	1,348 0 0

For warehouse, 34, Gutter-lane. Messrs. John Young & Son, architects:—

Lawrence & Sons	£3,770 0 0
Mansfield & Price	3,524 0 0
Hart	3,498 0 0
Patman	3,392 0 0
Myers & Sons	3,358 0 0
Brass	3,330 0 0
Webb & Sons	3,330 0 0
Newman & Mann	3,216 0 0
Ashby & Horner	3,197 0 0
Henshaw	2,965 0 0

For Abingdon Grammar-school. Mr. E. Dolby, architect:—

Nightingale	£5,363 0 0
Dover	5,250 0 0
Gowland	5,150 0 0
Thomas & Dicks	5,115 0 0
King	5,032 0 0
Trow & Son	5,000 0 0
Selby	4,998 0 0
Bull & Sons	4,883 0 0
Claridge	4,610 0 0

For building chapel, at Bexley. Messrs. Habershon & Pite, architects:—

Butler	£1,595 0 0
Patman & Co.	1,490 0 0
Nightingale	1,483 0 0
Lonagon	1,450 0 0
Falkner	1,439 0 0
Vaugh	1,375 0 0
Dabs	1,365 0 0
Watts	1,277 0 0
Pearce & Booth	1,154 0 0

For completing erection of villa, for Mr. W. Hall. Mr. Danby, architect:—

Willes	£1,913 0 0
Parks	1,876 0 0
King & Sons	1,665 0 0
Nightingale	1,653 0 0
Regis	1,591 0 0
Garrud	1,560 0 0
Rogers & Richards	1,196 0 0

For a villa, Grove Park, Camberwell, for Mr. Benj. Hooper. Mr. T. Nixon, architect. Quantities supplied by Messrs. Mann & Saunders:—

Thompson	£2,024 0 0
Cooper & Cullum	1,970 0 0
Henshaw	1,878 0 0
Nixon & Son	1,877 0 0
Colls & Co.	1,874 0 0
Higgs	1,813 0 0
Gammon & Sons	1,777 0 0

For a printing warehouse, in Hatton-garden, for Mr. J. Hazell. Messrs. Lander & Bedells, architects:—

Grover	£1,895 0 0
Bamford	1,850 0 0
Patman & Co.	1,845 0 0
Dove, Brothers	1,835 0 0
Manley & Rogers	1,782 0 0
Browne & Robinson	1,770 0 0
Mann	1,725 0 0
Axford	1,645 0 0

For alterations, No. 1A, Hyde Park Gate, for Mr. J. R. Haig. Mr. Thomas Hill, architect:—

Mansfield & Price	£740 0 0
Patman & Fotheringham	728 0 0
Nixon	697 0 0
Eborall	682 0 0
Saunders (accepted)	640 0 0

For road-making and drainage, on the Woodbridge-road Estate, Guildford. Mr. Henry Peak, architect and surveyor. Quantities not supplied:—

Watkins	£675 0 0
Garnett	609 0 0
Ayers (accepted)	473 11 0

For alterations to the Norfolk Arms, Hart's-lane, Bethnal-green, for Messrs. Truman, Hanbury, Buxton, & Co., brewers:—

Gray	£740 0 0
Marr	739 0 0
Kelley, Brothers	664 0 0
Langmead & Way (accepted)	655 0 0

For new buildings, Great Tower-street. Messrs. John Young & Son, architects:—

Jackson & Shaw	£9,500 0 0
Ashby & Sons	9,450 0 0
Mansfield & Price	9,308 0 0
Browne & Robinson	9,124 0 0
Henshaw	9,050 0 0
Ashby & Horner	8,840 0 0
Conder	8,475 0 0

For rebuilding No. 29, Mark-lane. Messrs. John Young & Son, architects:—

Lawrence & Sons	£6,320 0 0
Ashby & Horner	6,170 0 0
Hart	5,900 0 0
Ashby & Sons	5,823 0 0
Webb & Sons	5,743 0 0
Brass	5,634 0 0
Henshaw	5,599 0 0
Conder	5,560 0 0
Newman & Mann	5,539 0 0

For erecting a warehouse, at Batley, near Leeds, for Mr. John Blackburn. Mr. Walter Hanstock, architect. Quantities supplied:—

Mason and Bricklayer's Work.

Atkinson	£56[illegible] 0
Hepworth & Sons	52[illegible] 0
Brier	51[illegible] 0
Mortimer & Sons	49[illegible] 0
Hart & Brier	48[illegible] 0
Booth	46[illegible] 0
Chappell	458 18 6
Robinson & Hirst	439 10 0
Goldthorpe	423 9 11
Preston & Webster	410 0 0
Winsdale	390 0 0

Carpenter and Joiner's Work.

Jackson	868 0 0
Tyles	675 0 0
Ibberson	669 12 0
Petty & North	669 0 0
Willans	629 0 0
Hodgson	590 0 0

Plumber and Glazier's Work.

Brumitt	46 10 0
Firth	37 0 0
Kershaw & Co.	35 0 0
Senior	32 16 0
Lobley	31 3 4

Slater's Work.

Rawsthorne	160 0 0
Thompson & Son	142 10 0
Thornton	138 0 0

Ironfounder's Work.

Shilito	68 17 0
Messrs. Horsfield	67 0 0
Bagshaw	65 0 0

For paving footways, and for fences, of the Thames Embankment, from Westminster Bridge to the Temple Gardens:—

	Contract A to B.	Contract C to D.
Ritson	£9,500	£2,550
Furness	8,387	2,563
Turner	7,295	2,270
Nowell & Robson	7,000	2,150
Gooch	6,960	2,160
Benthall	6,856	2,240
Thirsk	6,729	2,290
Booth	6,343	2,053
Hill & Keddell	6,200	1,890
Mowlem & Co.	6,028	1,958
Knight & Son (acceptd.)	5,742	2,193

For rebuilding premises, High-street, Stoke Newington, for Mr. S. Brampton. Mr. F. G. Widdows, architect. The quantities were supplied by the architect:—

Patrick & Son	£7,119 0 0
Rivett	6,993 0 0
Conder	6,731 0 0
Brass	6,643 0 0
Ashby & Son	6,616 0 0
Newman & Mann	6,556 0 0
Henshaw	6,459 0 0
Hill & Keddell	6,360 0 0
Ennor (accepted)	6,346 0 0

For erecting two cottages, in the Sylvan-road, Snaresbrook, for Mr. Rowbotham. Mr. F. G. Widdows, architect:—

Hunt & Elkington (accepted)	£1,100 0 0

For painting the inside of the Agricultural Hall, Islington, for the Agricultural Hall Company:—

Patten	£3,600 0 0
Grist	1,555 0 0
Child	1,498 0 0
Sharman	1,400 0 0
Davis	1,340 10 6
Kellaway	1,340 0 0
Brown & Sons	1,338 0 0
Barnes	1,235 0 0
Harding	1,200 0 0
Gray	1,198 0 0
Markham (accepted)	847 0 0
Allard	740 0 0

For new building, and raising additional story, Featherstone-street, City-road. Mr. H. J. Hammon, architect:—

King & Sons	£2,053 0 0
Eaton & Chapman	2,011 0 0
Henshaw	1,985 0 0
Perry & Co.	1,985 0 0
Macey	1,943 0 0
Preedy & Son	1,740 0 0

For villa residence, at Acton, for Mr. T. L. Edwards. Messrs. Lander & Bedells, architects:—

Bywater	£1,049 0 0
Harding	963 0 0
Adamson & Son	891 0 0
Palmer	880 0 0
Sale	846 0 0
Nye	844 0 0
Blick	838 0 0
Bray	820 0 0
Cowland	820 0 0
Mann	789 0 0